

Winnemucca District Proposed Resource Management Plan and Final Environmental Impact Statement

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Volume 3: Chapters 4 (continued), 5, 6, 7



Winnemucca District, Nevada

August 2013



MISSION STATEMENT

To sustain the health, diversity, and productivity of the public lands
for the use and enjoyment of present and future generations.

BLM/NV/WN/ES/13-11+1793

Volume 3 of 4

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LIST OF ACRONYMS

Acronym or Abbreviation	Full Phrase
ACEC	area of critical environmental concern
AFY	acre-feet per year
AML	appropriate management level
AMP	allotment management plan
AMSL	above mean sea level
APHIS	Animal and Plant Health Inspection Service
APHIS-WS	Animal and Plant Health Inspection Service-Wildlife Services
AQ	air quality
ASPCA	American Society for the Prevention of Cruelty to Animals
ATV	all-terrain vehicle
AUM	animal unit month
BA	Biological Assessment
BCB	Backcountry Byways
BEA	Bureau of Economic Analysis
BIA	US Department of the Interior, Bureau of Indian Affairs
BLM	US Department of the Interior, Bureau of Land Management
BMPs	best management practices
BO	Biological Opinion
BPS	budget planning system
BRDHCET	Black Rock Desert High Rock Canyon Emigrant Trails
CA	common to all alternatives
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH ₄	methane
CHP	cultural/historic/paleontological
CK	cave and karst resources
CNHT	California National Historic Trail
CNIDC	Central Nevada Interagency Dispatch Center
CO	carbon monoxide
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalents
CSP	concentrated solar power
CR	cultural resources
CWA	Clean Water Act
CWPP	Community Wildfire Protection Plan
CWMA	Cooperative Weed Management Area
DFC	desired future condition
DM	Departmental Manual
DOE	Department of Energy
DOI	Department of Interior
EA	environmental assessment
EIS	environmental impact statement
EO	Executive Order
EPA	US Environmental Protection Agency
ERMA	extensive recreation management area
ES	Executive Summary
ESA	Endangered Species Act of 1973

LIST OF ACRONYMS *(continued)*

Acronym or Abbreviation	Full Phrase
ES&R	emergency stabilization and rehabilitation
FERC	Federal Energy Regulatory Commission
FIP	Federal Implementation Plan
FLPMA	Federal Land Policy and Management Act
FLTFA	Federal Land Transaction Facilitation Act
FMU	Fire Management Unit
FMUD	final multiple use decision
FOFEM	First Order Fire Effects Model
FONSI	Finding of No Significant Impact
FPA	fire program analysis
FR	Federal Register
FRCC	fire regime condition class
FW	fish and wildlife
G	geology
GAWS	general aquatic wildlife survey
GHG	greenhouse gas
GIS	geographical information system
GWP	global warming potential as carbon dioxide equivalents
HA	herd area
HAP	hazardous air pollution
HMA	herd management area
HMAP	herd management area plan
HMP	habitat management plan
HUA	herd use area
HVH	high value habitat
IBLA	Interior Board of Land Appeals
IDT	interdisciplinary team
IMP	interim management policy or plan
IOP	interagency operation plan
IPC	integrated pest control
IPCC	Intergovernmental Panel on Climate Change
IPM	Integrated Pest Management
ISA	instant study area
ITAs	Indian Trust Assets
KGRA	known geothermal resource area
LCT	Lahontan cutthroat trout
LG	livestock grazing
LR	lands and realty
LUP	land use plan
LWC	lands with Wilderness characteristics
MACT	maximum available control technology
MBTA	Migratory Bird Treaty Act
MFP	management framework plan
MIST	minimum impact suppression tactics

LIST OF ACRONYMS *(continued)*

Acronym or Abbreviation	Full Phrase
MOU	memorandum of understanding
MR	mineral resources: leasable, locatable, salable
NAAQS	National Ambient Air Quality Standards
NAC	Nevada Administrative Code
NASA	National Aeronautics and Space Administration
NCA	National Conservation Area
NDEP	Nevada Division of Environmental Protection
NDOA	Nevada Department of Agriculture
NDOM	Nevada Division of Minerals
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NDVI	Normalized Difference Vegetation Index
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act of 1969
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NGO	non-government organizations
NHPA	National Historic Preservation Act
NHT	National Historic Trail
NOA	Notice of Availability
NOI	Notice of Intent
N ₂ O	Nitrous oxide
NO _x	Nitrogen oxides
NPS	National Park System
NRCS	US Department of Agriculture, Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	new source review
NSO	no surface occupancy
Sierra Front/NW RAC	Sierra Front Northwestern Great Basin Resource Advisory Council
NWSRS	National Wild and Scenic River Systems
NV	Nevada
OCTA	Oregon-California Trail Association
OHV	off-highway vehicle
ORV	Outstanding Remarkable Value
PAH	polycyclic aromatic hydrocarbon
PCPI	per capita personal income
PD	Paradise-Denio
PE	chemical and biological control
PFC	proper functioning condition
pH	the symbol for the logarithm of the reciprocal of hydrogen ion concentration in gram atoms per liter, measuring the acidity or alkalinity of a solution
PL	public law
PM _{2.5}	particulate matter smaller than 2.5 microns in diameter
PM ₁₀	particulate matter smaller than 10 microns in diameter
PMU	population management unit
ppm	part per million

LIST OF ACRONYMS *(continued)*

Acronym or Abbreviation	Full Phrase
PR	paleontological resources
PRMP	Proposed Resource Management Plan
PS	public health and safety
PSD	prevention of significant deterioration
PV	photovoltaics
PVA	prospectively valuable area
PWR	Public Water Reserve
PYFC	Potential Fossil Yield Classification
R	recreation
R&PP	Recreation and Public Purposes Act
RAC	resource advisory council
RAS	Range Administration System
RAMS	risk assessment and mitigation strategy
RE	renewable energy
RFD	reasonably foreseeable development
RFDS	Reasonably Foreseeable Development Scenario
RFFA	reasonably foreseeable future action
RIP	range improvement project
RMIS	Recreation Management Information System
RMP	resource management plan
RMZ	recreation management zone
RNA	Research Natural Area
ROD	record of decision
ROG	reactive organic compounds
ROI	region of influence
ROS	Recreation Opportunity Spectrum
ROW	right-of-way
S	soils
SG	Sonoma-Gerlach SASEM Simple Approach Smoke Estimation Model
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SMA	Special Management Area
SNPLMA	Southern Nevada Public Land Management Act
SOG	standard operating guideline
SOP	standard operating procedure
SO _x	sulphur oxides
SRH	standards for rangeland health
SRMA	special recreation management area
SRP	special recreation permit
SSS	special status species
T&E	threatened and endangered
TA	transportation and access
TC	tribal consultation
TCP	traditional cultural property
TDS	total dissolved solids
TIP	Tribal Implementation Plan
TM	transportation and travel management

LIST OF ACRONYMS *(continued)*

Acronym or Abbreviation	Full Phrase
TMDL	total maximum daily load
TNEB	thriving natural ecological balance
TNR	temporary nonrenewable
TSP	total suspended particles
TSS	total suspended solids
US	United States
USC	United States Code
USDA	United States Department of Agriculture
USDI	United States Department of the Interior
USFS	United States Department of Agriculture, Forest Service
USFWS	US Department of the Interior, Fish and Wildlife Service
USGS	US Geological Survey
VF	vegetation forest and woodland products
VOC	volatile organic compounds
VR	vegetation rangelands
VR	visual resource inventory
VRM	visual resource management
VRW	vegetation riparian and wetlands
VW	vegetation weeds
WA	wilderness area
WAFWA	Western Association of Fish and Wildlife Agencies
WAPT	Wildlife Action Plan Team
WD	Winnemucca District
WDM	wildlife damage management
WDO	Winnemucca District Office
WFDSS	Wildland Fire Decision Support System
WFM	wildland fire ecology management
WFRHBA	Wild Free Roaming Horses and Burros Act
WFSA	wildland fire situation analysis
WHB	wild horses and burros
WR	water resources
WSA	wilderness study area
WSR	wild and scenic river
WUG	Western Utility Group
WUI	wildland urban interface
WWV	watchable wildlife viewing site

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Effects under Alternative A

This alternative allows for the following acreage designations for VRM within HMAs: VRM Class I - 311,054 acres, VRM Class II - 46,484 acres, VRM Class III - 70,100 acres and VRM Class IV - 1,583,449 acres. Alternative A proposes that approximately 357,538 acres within the Winnemucca District HMAs fall into VRM Class I and II. Under the scenario described above, this alternative would be the least beneficial for WHB and their habitats.

Effects under Alternative B

Alternative B allows for the following acreage designations for VRM within HMAs: VRM Class I - 302,631 acres, VRM Class II - 25,371 acres, VRM Class III - 574,267 acres and VRM Class IV - 914,230 acres. Under Alternative B approximately 428,002 acres within the Winnemucca District HMAs fall into VRM Class I and II. This alternative would be more beneficial for WHB habitat than Alternative A, but less than Alternatives C and D.

Effects under Alternative C

This alternative allows for the following acreage designations for VRM within HMAs: VRM Class I - 307,379 acres, VRM Class II - 763,687 acres, VRM Class III - 771,960 acres and VRM Class IV - 146,441 acres. Under this alternative approximately 1,071,066 acres within the Winnemucca District HMAs fall into VRM Class I and II. Alternative C is more beneficial for WHB habitat than Alternative A and B, but less than Alternative D.

Effects under Alternative D

Alternative D allows for the following acreage designations for VRM within HMAs: VRM Class 1 - 302,631 acres, VRM Class 2 - 945,181 acres, VRM Class 3 - 633,391 acres and VRM Class 4 - 35,681 acres. Under Alternative D approximately 1,247,812 acres within the Winnemucca District HMAs fall into VRM Class 1 and 2. Alternative D would be the most beneficial for WHB and their habitat.

Wild Horses and Burros: Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

WHB normally prefer not to graze on steep slopes, where caves tend to be located. Caves that are accessible to wild horses or burros normally do not contain forage; however, if the caves are protected or fenced, this could directly impact them by reducing a source of shade or shelter from inclement weather.

Seasonal closures could benefit wild horses and burros by limiting the possibility for human disturbance.

Wild Horses and Burros: Effects from Livestock Grazing Management

Effects Common to Alternatives A, B, C (option 1), and D

Because Alternative C, Option 2 eliminates livestock grazing, the impacts from grazing are common to all alternatives except C Option 2.

Designating lands as open for grazing and allocating forage for livestock grazing within HMA has direct and indirect impacts on WHB. When livestock and wild horses occupy the same area, their needs for water and forage are competitive. Generally, any increase in livestock grazing in areas inhabited by WHB would decrease the amount of forage and water available to WHB. In extreme circumstances, horses could outcompete livestock temporarily and could preclude livestock access to certain water sources.

Competition for water and forage would be mitigated through adjustments in season of use, AUMs, AMLs and water developments. Reducing AMLs, may be detrimental to WHB herds, which need a recommended minimum of 50 effective breeding animals (i.e., total population size of about 150-200 animals) to maintain genetic diversity. Protecting existing or developing new water sources would be beneficial to WHB by ensuring availability of water as long as the sources were accessible.

Monitoring the range conditions could be beneficial to WHB if it were to result in healthier rangeland vegetative communities and increased forage opportunities.

In areas where allotments coincide with HMAs, livestock operators would not be authorized to graze domestic horses and burros in order to prevent conflicts between domestic stock and WHB. Not allowing WHB to mix with their domestic counterparts could indirectly contribute to the health of wild herds by reducing the spread of disease and competition for forage and water.

Allowing for conversion from cattle to sheep or goats on grazing allotments that have HMAs would be beneficial to WHB as there is less of a dietary overlap between horses and sheep or goats. Converting from sheep to cattle would be less beneficial to WHB for exactly the opposite reason. Conversion between cow/calf pairs to yearlings would be beneficial to WHB as there would be half of the animal units (1 cow and 1 calf to 1 yearling) on the range to compete with the WHB.

Range improvements, such as water developments, would directly benefit WHB by providing additional water sources while some improvements, such as fencing, would have negative effects by excluding forage and limiting the free-roaming nature of WHB.

Development and maintenance of springs is beneficial for WHB. These developments help to spread both WHB, wildlife and livestock out and therefore reduce competition among them and assist with more uniform utilization which can lead to healthy rangelands.

Proper installation of water developments at springs would ensure that the water source would remain available for WHB, wildlife and livestock to use for drinking water and that the riparian area is maintained. This would be beneficial for WHB.

Fencing to control livestock could directly impair the wild, free-roaming nature of WHB. Livestock and WHB conflicts could include damage to fences and the animals themselves. Livestock management would increase the opportunity for disturbance of WHB from the human element during times that the livestock are being gathered.

Removal of range improvement projects that are no longer functioning or needed to meet resource needs would be beneficial to WHB, particularly if they were fences. Removal of fences would help maintain the wild and free roaming nature of WHB.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the individual effects below would impact WHB.

Effects under Alternative A

Implementation of appropriate management actions would occur to WHB or livestock relative to the degree to which each animal species is contributing to the non-attainment of resource objectives (if known) or proportionally (if unknown). This could directly impact WHB by reducing AMLs or by reducing the amount livestock grazing within the HMA. This would decrease the competition between WHB and livestock and would allow for the resources to progress towards attainment healthy range lands within the HMA and ensuring a thriving natural ecological balance.

Providing forage banks on allotments that contain HMAs would have the same impacts on WHB as described above under “Effects Common to Alternatives A, B, C (Option1) and D regarding livestock grazing. These effects would be on a short term basis and only when the forage bank was being used as long as the WHB populations are maintained within AML.

Most lands that would be acquired by BLM are intermingled throughout the public land. These lands, unless fenced, were previously grazed by livestock and WHB while in private ownership. There would be no additional impacts on WHB from allowing livestock to continue to use these lands under the presently authorized grazing system.

Authorizing TNR use on a case by case basis in allotments with HMAs could impact WHB. In the short term, issuance of TNR would reduce the amount of forage that is available for WHB. It could also amplify the effects of competition between WHB and livestock as the livestock could either be out on the range for a longer period of time or in higher numbers than normally authorized.

Allowing no more than three consecutive years of grazing during the critical growth period for plants, unless land health standards are being achieved would be beneficial to WHB. This would allow for the resources to progress towards attainment healthy range lands within the HMA and ensuring a thriving natural ecological balance.

Restricting livestock grazing during a drought would indirectly benefit WHB by maintaining land health which would ensure a sustainable rangeland for future herds. Direct impacts on WHB by restricting livestock use during a drought, would be less competition for forage and water and reduced stress on the animals themselves.

Adjustment of allotment boundaries within HMAs due to management actions could impact the wild and free roaming nature if there are additional fences proposed within HMAs, or locations of existing fences are changed, to reflect the new boundaries. Under this alternative, no boundary changes are proposed for allotments within HMAs, therefore there would be no impact to WHB from this action.

Under this alternative when new waters are developed in big game habitat for livestock, the permittees would only be required to provide water for wildlife when livestock are present. In allotments with HMAs, these waters would also be a source of water for WHB as well as livestock and wildlife. Turning off these developments when livestock are not present would directly impact WHB if they are using the water source and then it is suddenly it is unavailable. This is especially a

problem during the summer months when animals are more reliant on water and it can impact the health of WHB. Therefore, Alternative A is not considered beneficial to WHB.

Closing exclosures to livestock grazing can have an indirect beneficial impact to WHB. Normally, exclosures are constructed to protect a spring source or riparian area. Protection of these resources allows the springs and riparian areas to become or maintain a healthy functional status. When the health of the riparian areas is maintained, they produce more water that is available for WHB, wildlife and livestock.

Effects under Alternative B

Implementing appropriate management actions primarily for WHB over livestock under conditions where allotment-specific objectives and the Standards for Rangeland Health are not being met would directly impact WHB by maintaining AUMs for livestock and by reducing AMLs for WHB. It could also benefit WHB, by reducing the amount of animals on the range which would allow the habitat to meet or progress towards meeting the SRH.

Under Alternative B, there would be no forage banks established. Therefore, the effects would be the same as those outlined above under Effects Common to Alternatives A, B, C (Option1) and D regarding livestock grazing.

Most lands that would be acquired by BLM are intermingled throughout the public land. These lands, unless fenced, were previously grazed by livestock and WHB while in private ownership. There would be no additional impacts on WHB from allowing livestock to continue to utilize these lands under the presently authorized grazing system.

Authorizing TNR use on a case by case basis would have the same impacts on WHB as described under Alternative A.

Alternative B allows for continuous, season-long use where it has been demonstrated to be consistent with achieving land health standards. Although the land health standards are being met, there are still impacts on WHB. Direct impacts on WHB would be year round competition with livestock for forage and water and the likelihood of increased stressed on WHB due to the competition.

Restricting livestock grazing during a drought would indirectly benefit WHB by maintaining land health which would ensure a sustainable rangeland for future herds. Direct impacts on WHB by restricting livestock use during a drought, would be less competition for forage and water and reduced stress on the animals themselves.

Adjustment of allotment boundaries within HMAs due to management actions could impact the wild and free roaming nature if there are additional fences proposed within HMAs, or locations of existing fences are changed, to reflect the new boundaries. Under this Alternative B, no boundary changes are proposed for allotments within HMAs, therefore there would be no impact to WHB from this action.

Under this alternative when new waters are developed in big game habitat for livestock, the permittees would only be required to provide water for wildlife when livestock are present. In allotments with HMAs, these waters would also be a source of water for WHB as well as livestock

and wildlife. Turning off these developments when livestock are not present would directly impact WHB if they are using the water source and then it is suddenly it is unavailable. This is especially a problem during the summer months when animals are more reliant on water and it can impact the health of WHB. Therefore, Alternative B is not considered beneficial to WHB.

Providing overflow ponds on range improvement projects would result in additional water storage, allowing the permittee more time to conduct repairs on the range improvement without running out of water for livestock, WHB and wildlife. However, overflow ponds can be a source of contaminated water to the livestock, WHB and wildlife as livestock tend to congregate and defecate within the pond area.

Under Alternative B, exclosures would only be closed to grazing when site-specific allotment terms and conditions, objectives, and land health standards are not being achieved. Livestock in small exclosures can compact spring sources and denude vegetation, which would impact the amount of water available for WHB, livestock and wildlife. Allowing livestock to graze within an exclosure without a prescribed outcome can be detrimental to the riparian area and/or spring(s) and would have a negative impact on WHB.

Effects under Alternative C

Option 1

Under Alternative C, Option 1, livestock grazing would be considered secondary to other resource values. Therefore, livestock authorizations would only be issued if livestock grazing is found to be complimentary to other resource values. If livestock grazing is not found to be complimentary to other resource values, then no authorization would be issued, resulting in the same impacts as identified under Option 2 below. Managing grazing to be complementary and secondary to other resources would be beneficial to WHB.

Implementing appropriate management actions to WHB or livestock relative to the degree to which each animal species is contributing to the attainment or non-attainment of resource objectives (if known) or proportionally (if unknown) would have the same impacts as described under Alternative A.

The permitting of forage banks in allotments that contain HMAs would have the same general impacts on WHB as described under Alternative A, although allotments would have to meet certain criteria in order to be designated as a forage bank.

Under Alternative C, Option 1, lands acquired by the BLM would be closed to livestock grazing. Most lands that would be acquired by BLM are intermingled throughout the public land and, unless fenced, were previously grazed by livestock and WHB while in private ownership. If these lands are located within a grazing allotment they would have to be fenced in order to keep livestock from grazing on them. Any construction of fences to prohibit livestock grazing on acquired lands could impair the wild and free roaming nature of WHB.

Not authorizing temporary non-renewable use to permittees under Alternative C would be beneficial to WHB in allotments that contain HMAs. These benefits include more water and vegetation

available for WHB and no increases in the competition between livestock and WHB for water and forage outside of the normal livestock grazing season.

Limiting the term of livestock grazing to no more than two consecutive years of grazing during the critical growing period, unless all animals are foraging on key forage species at level that maintains plant health and protects watersheds would be beneficial to WHB. Allowing plants to set seed one year out of three is crucial for maintenance of vegetation resulting in increasing plant vigor, cover, productivity and diversity. Vegetation conditions would be improved for upland vegetation and therefore would allow for attainment of the SRH and a TNEB.

Restricting livestock grazing during a drought would indirectly benefit wildhorses and burros by maintaining land health which would ensure a sustainable rangeland for future herds.

Under Alternative C, no boundary changes are proposed for allotments within HMAs, therefore there would be no impact to WHB from this action.

Requiring the permittee to provide water for wildlife and WHB from June 1 to September 30, even if livestock have been removed, is more beneficial to WHB than only providing water for wildlife when livestock are present as outlined under Alternatives A and B.

When developing springs to provide waters for WHB, wildlife and livestock, overflow ponds would not be allowed under this alternative. Troughs would have to be equipped with float valves to ensure that surface water remains at the source to maintain the associated riparian area and assure the attainment of Standards. This would be beneficial to WHB as it would allow for meeting the land health standard for riparian areas.

Exclosures would be closed to livestock grazing for the life of this plan under Alternative C. This would have the same impacts on WHB as described under Alternative A.

Option 2

Eliminating livestock grazing would directly benefit WHB by eliminating competition with domestic livestock for forage and water and would reduce the possibility of the negative effects of overgrazing by livestock. This alternative would also be beneficial to WHB as it would avoid the mixing of domestic horses and burros with their wild counterparts as there would be no authorized grazing. Eliminating grazing on public lands could reduce erosion caused by high livestock use, and would allow for improvement of upland, riparian and wetland habitat at a faster rate as long as WHB populations are maintained within AML.

Under Alternative C, Option 2, lands acquired by the BLM would be closed to livestock grazing and no temporary non-renewable use permits would be authorized. These actions would benefit WHB as there would be more water and vegetation available for WHB and no competition between livestock and WHB for water and forage.

Under Alternative C, Option 1, range improvements that are not compatible with other resources and uses would be removed. This would be beneficial to WHB as it would allow for removal of fences that are determined to interfere with their wild and free roaming nature.

When developing springs to provide waters for WHB and wildlife, overflow ponds would not be allowed under this alternative. Troughs would have to be equipped with float valves to ensure that surface water remains at the source to maintain the associated riparian area and assure the attainment of Standards. This would be beneficial to WHB as it would allow for meeting the land health standard for riparian areas.

Effects under Alternative D

Implementation of appropriate management actions would occur to WHB or livestock relative to the degree to which each animal species is contributing to the non-attainment of resource objectives (if known) or proportionally (if unknown). This could directly impact WHB by reducing AMLs or by reducing the amount livestock grazing within the HMA. This would decrease the competition between WHB and livestock and would allow for the resources progress towards attainment healthy range lands within the HMA and ensuring a thriving natural ecological balance.

The permitting of forage banks in allotments that contain HMAs would have the same general impacts on WHB as described under Alternative A, although allotments would have to meet certain criteria in order to be designated as a forage bank. Under this alternative, one of the criteria is that the WHB populations must be at or below high AML prior to an allotment being used as a forage bank. This would ensure progress towards meeting the land health standards.

Most lands that would be acquired by BLM are intermingled throughout the public land. These lands, unless fenced, were previously grazed by livestock and WHB while in private ownership. There would be no additional impacts on WHB from allowing livestock to continue to use these lands under the presently authorized grazing system.

Impacts on livestock grazing from authorizing TNR applications would be contingent upon meeting specific criteria. If the criteria are met, TNR would be authorized and impacts would be the same as under Alternatives A and B. Under this alternative, one of the criteria is that the WHB populations must be at or below high AML prior to TNR being authorized.

Allowing no more than three consecutive years of grazing during the critical growth period for plants, unless land health standards are being achieved would be beneficial to WHB. This would allow for the resources to progress towards attainment healthy range lands within the HMA and ensuring a thriving natural ecological balance; however, it would be at a slower rate than under Alternative C.

Restricting livestock grazing during a drought would indirectly benefit wildhorses and burros by maintaining land health which would ensure a sustainable rangeland for future herds. Direct impacts on WHB by restricting livestock use during a drought, would be less competition for forage and water and reduced stress on the animals themselves.

Adjustment of allotment boundaries within HMAs due to management actions could impact the wild and free roaming nature if there are additional fences proposed within HMAs, or locations of existing fences are changed, to reflect the new boundaries. Under this alternative, the boundary between the Pole Canyon and Rodeo Creek Allotments would be eliminated and the Pole Canyon Allotment would become part of the Rodeo Creek Allotment. These allotments are within the Fox and Lake HMA, therefore this would be positive benefit to WHB as the boundary fence between the

two allotments may be eliminated once the Pole Canyon Allotment is incorporated into the Rodeo Creek Allotment.

Requiring the permittee to provide water for wildlife from June 1 to September 30 would have the same impacts on WHB as Alternative C, Option 1.

When developing springs to provide waters for WHB and wildlife, overflow ponds would not be authorized under this alternative. Troughs would have to be equipped with float valves to ensure that surface water remains at the source to maintain the associated riparian area and assure the attainment of Standards. This would be beneficial to WHB as it would allow for meeting the land health standard for riparian areas.

Under this alternative, exclosures would be closed to livestock grazing except where it is determined that prescribed grazing is necessary to achieve a specific resource goal. Closing exclosures to livestock grazing can have an indirect beneficial impact to WHB. Normally, exclosures are constructed to protect a spring source or riparian area. Protection of these resources allows the springs and riparian areas to become or maintain a healthy functional status. When the health of the riparian areas is maintained, they produce more water that is available for WHB, wildlife and livestock. Should it be determined that a prescription of grazing is needed to meet a certain resource objective, then livestock grazing may be permitted to reach that desired condition, which should have little impact on WHB.

Wild Horses and Burros: Effects from Minerals Management

Effects Common to All Alternatives

General

Depending on the location of the activity, mineral extraction within HMAs could temporarily or permanently remove rangeland and forage areas for WHB. Activities associated with mineral development include construction of fences, well pads, roads, pipelines, and other facilities for processing. In addition to the loss of forage, other impacts from these activities include reduced forage palatability because of dust on vegetation, restriction of WHB movement, increased potential for harassment of WHB herds, and temporary displacement of WHB.

During the exploration and testing phase of mineral development, direct impacts on WHB are expected to be minimal due to the small amount of acreage affected by exploration.

During the development stage, protection of WHB resources through mitigation measures, SOPs and BMPs (Appendix B) would lessen these impacts on WHB by restoring rangeland vegetation and health.

Withdrawal or closure of areas for mineral development and leasing that occur within HMAs would reduce the potential for human-herd interactions and prolonged forage loss.

Fluid

Water produced from oil and gas and geothermal operations could be made available to WHB for use if water quantity and quality were sufficient. Additional water sources may increase distribution

which would indirectly increase available forage for livestock, wildlife, WHB, and other uses by opening areas that have received limited use in the past due to the lack of available water. Some facilities, in particular above-ground pipelines, may locally inhibit the ability to roam freely.

Locatable

In addition to the impacts identified under Effects Common to Alternatives A, B, C, and D, the following individual effects would impact WHB.

Depending on the location of the activity, mineral extraction within HMAs could temporarily or permanently remove rangeland and forage areas for WHB. Activities associated with mineral development include construction of fences, wellpads, roads, pipelines, and other facilities for processing. In addition to the loss of forage, other impacts from these activities include reduced forage palatability because of dust on vegetation, restriction of WHB movement, increased potential for harassment of WHB herds, and temporary displacement of WHB.

During the exploration and testing phase of mineral development, direct impacts on WHB are expected to be minimal due to the small amount of acreage affected by exploration.

During the development stage, protection of WHB resources through mitigation measures, SOPs and BMPs (Appendix B) would lessen these impacts on WHB by restoring rangeland vegetation and health.

Withdrawal or closure of areas for mineral development and leasing that occur within HMAs would reduce the potential for human-herd interactions and prolonged forage loss.

Fluid

Water produced from oil and gas and geothermal operations could be made available to WHB for use if water quantity and quality were sufficient. Additional water sources may increase distribution which would indirectly increase available forage for livestock, wildlife, WHB, and other uses by opening areas that have received limited use in the past due to the lack of available water.

Locatable

Impacts would be the same as those identified under Effects Common to Alternatives A, B, C, and D.

Effects under Alternative A

See Effects Common to All Alternatives above.

Effects under Alternative B

General

Alternative B which would apply existing guidance and standards for reclamation and closure only to operators of sites where there is no reasonable prospect for continued economic use would be least beneficial to WHB as reclamation of the sites could be delayed for up to five years which would also delay forage opportunities for WHB.

The lands under consideration for sustainable development already have activities that may or may not have impacts on WHB. Because of this, continued use of these lands may not have much additional impact, unless the future uses require ROWs, or attracted additional people and OHV use or similar activities that could increase the chance of harassment or disturbance to herds or degrade rangeland conditions.

Short-term impacts from issuances of ROW include the temporary removal of forage and displacement of WHB. Long-term direct and indirect impacts on WHB from site-specific lands and realty actions include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment from increased levels of human activities.

Permanent losses of forage and range improvement projects (RIPs) could occur as a result of land disposals or exchanges. Reductions in AML could occur where large blocks of land are either disposed to the public or the land exchange is not in the same area as the HMA losing the land.

Effects under Alternative C

See Effects Common to All Alternatives above.

General

Alternative C requires site reclamation for leasable, locatable, and saleable minerals to be as close to original topography and vegetation as possible, using native vegetation and organic fertilizers, regardless of economics. This alternative would be most beneficial to WHB in the longterm by providing for native rangelands that would progress towards meeting the standards of rangeland health at a faster speed than those planted with non-natives.

Saleable

Mineral operations would only be open to governmental entities under Alternative C and would require rehabilitation or reclamation of mineral operations. These include recontouring, stabilizing, revegetating, and removing facilities before closure to restore pre-operational topography and establish a historically native vegetation community to the maximum extent possible. This would be most beneficial to WHB in the long-term by providing a more natural range and forage.

Individual Effects under Alternative D

See Effects Common to All Alternatives above.

Wild Horses and Burros: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

Impacts of recreation on WHB include loss of forage, reduced forage palatability due to dust on the vegetation, and disturbance and harassment caused by increased levels of human activities. SRMAs that are managed for increased OHV use and access would increase the impacts stated above. SRMAs that are managed for a more primitive recreational experience would decrease the impacts stated above.

Areas that are limited or closed to OHV use under any of the alternatives would be beneficial to WHB as it would lessen the chance of human-caused noise, dust, and vegetation disturbance and by reducing opportunity for the harassment of WHB.

Prohibiting camping within 300 feet of spring sources would be beneficial to WHB. This restriction would ensure that campers would not keep WHB from accessing important water sources within HMAs.

Any development of reservoir sites, within HMAs, for water-based recreation could potentially provide an additional source of water for WHB.

Effects under Alternative A

Under this alternative, no SRMAs would be designated, therefore, there would be no impacts on WHB from SRMAs

Effects under Alternative B

Under Alternative B, approximately 473,527 acres designated as SRMAs would be within HMAs. The impacts on WHB would be the same as those described under Effects Common to Alternatives A, B, C and D.

During the planning stage, consideration of protection of WHB resources through mitigation measures, SOPs (Appendix B), and BMPs (Appendix B) to lessen these impacts on WHB would be applied and therefore impacts are expected to be minimal.

Effects under Alternative C

Designation of the two SRMAs under Alternative C would have no impacts on WHB as these SRMAs are not located within any HMAs.

Limiting the annual number of permits for commercial activities to one per year would be beneficial to wild horses and burro, when these events occur within HMAs. This action would decrease the amount of disturbance and displacement of WHB that would result from the proposed events.

During the planning stage, consideration of protection of WHB resources through mitigation measures, SOPs (Appendix B), and BMPs (Appendix B) to lessen these impacts on WHB would be applied and therefore impacts are expected to be minimal.

Effects under Alternative D

Under Alternative D, approximately 473,527 acres designated as SRMAs would be within HMAs. The impacts on WHB would be the same as described under Alternative B.

Limiting the annual number of permits for commercial activities to three per year would be beneficial to wild horses and burro, when these events occur within HMAs. This action would decrease the amount of disturbance and displacement of WHB, however, this alternative would be less beneficial to WHB than Alternative C.

During the planning stage, consideration of protection of WHB resources through mitigation measures, SOPs (Appendix B), and BMPs (Appendix B) to lessen these impacts on WHB would be applied and therefore impacts are expected to be minimal.

Wild Horses and Burros: Effects from Renewable Energy Management

Effects Common to All Alternatives

Exclusion zones or avoidance areas, land use restrictions, and individual stipulations could be beneficial to WHB by limiting habitat disturbance within HMAs and limiting the potential for human interaction with WHB herds.

Renewable energy development within HMAs affects habitat in the short term during construction of access roads and facilities (such as wind turbines, solar panels, and biomass plants). Impacts include temporary loss of forage, reduced forage palatability because of dust on vegetation, and temporary harassment and displacement of WHB.

In the long term, acreage may be lost, depending on the size of these operations and therefore, the AML may have to be adjusted.

Effects under Alternative A

Alternative A would benefit WHB less than Alternatives C and D which allow for designation of more exclusion zones, but would benefit WHB more than Alternative B, which only allows for avoidance areas.

Effects under Alternative B

Alternative B allows for designation of 716,528 acres as avoidance areas within HMAs, which may be more beneficial to WHB than Alternative A, which has no designation of avoidance areas. Any project within an avoidance area would have required special stipulations to mitigate resource impacts.

Alternative B would be less beneficial than Alternatives C and D to WHB because it does not specify any exclusion zones within HMAs and has less acres proposed to be designated as avoidance areas that could lessen human interaction with WHB.

Effects under Alternative C

This alternative allows for designation of 869,645 acres as avoidance areas and 1,279,481 acres as exclusion zones.

Alternative C would benefit WHB the most by designating 1,279,481 acres as exclusion zones, which would eliminate the potential for discretionary projects within these areas as opposed to avoidance areas in which a ROW may be constructed, but with required special stipulations

Effects under Alternative D

Alternative D allows for designation of 1,773,199 acres as avoidance areas and 1,199,539 acres as exclusion zones.

This alternative would benefit WHB more than Alternative B due to the greater amount of acreage designated as avoidance areas, but less than Alternative C which has more acreage designated as exclusion areas.

Wild Horses and Burros: Effects from Transportation and Access Management

Effects Common to All Alternatives

Any road decommissioning or closure within HMAs would benefit WHB by potentially limiting human access and allowing for revegetation and rehabilitation of the roads. Road closures within riparian areas, where roads have been shown to impact the integrity of the riparian, would be beneficial to WHB as it would allow the riparian area to heal and progress towards meeting the standards of rangeland health.

Actions to limit erosion and the spread of weeds would be beneficial to WHB by improving the general health of the rangeland in the long term. However, if WHB are the cause of erosion, excluding them from accessing the areas during rehabilitation may reduce forage in the short term.

The short term impact of new road construction in HMAs is an increased likelihood of human disturbance during the construction which could displace WHB. Long term direct and indirect impacts on WHB from newly developed transportation routes include loss of forage which may result in a reduced AML, reduced forage palatability because of dust on vegetation, and disturbance and harassment caused by increased levels of human activities.

Effects under Alternative A

Alternative A, with no provisions to re-reroute, relocate and rehabilitate roads that create habitat fragmentation or that adversely impact wildlife except in existing and potential bighorn sheep habitat would be least beneficial to WHB. If timing restrictions are used for bighorn sheep, then there may be a beneficial impact to WHB by limiting the amount of time that human activity could occur. This would only be beneficial to WHB where big horn sheep habitat overlaps their habitat. Construction of capital improvement projects may affect WHB by increasing the probability of encounters with humans and removal of forage base, which could lead to a change in the AML for that HMA.

Effects under Alternative B

Alternative B allows for road relocation and rehabilitation only if other access is provided. This alternative would be beneficial to WHB as it would lessen the impacts of habitat fragmentation but it would be less beneficial than Alternatives C and D as it would still have potential for disturbance of WHB due to continued access of the area by humans. Construction of capital improvement projects may affect WHB by increasing the probability of encounters with humans and removal of forage base, which could lead to a change in the AML for that HMA. Temporary road closures within HMAs would be beneficial to WHB as it would decrease the amount of time that horses would likely be disturbed by human activity.

Effects under Alternative C

Alternative C would allow for removal, re-routing and rehabilitation of roads that create habitat fragmentation, potentially increasing forage for WHB in an HMA.

Not constructing new capital improvement projects in HMAs would be more beneficial to WHB than the other three alternatives that allow for the projects as it would not increase the probability of displacement of WHB by human activities. Temporary road closures within HMAs would be beneficial to WHB as it would decrease the amount of time that they would likely be disturbed by human activity.

Effects under Alternative D

Construction of capital improvement projects may affect WHB by increasing the probability of encounters with humans and removal of forage base, which could lead to a change in the AML for that HMA. Temporary road closures within HMAs would be beneficial to WHB as it would decrease the amount of time that horses would likely be disturbed by human activity.

Wild Horses and Burros: Effects from Lands and Realty Management

Effects Common to All Alternatives

Short term impacts from lands and realty actions (such as construction of power lines, pipelines, and other construction activities) within HMAs, include the temporary removal of forage and displacement of WHB. Long-term impacts on WHB from lands and realty actions include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment from increased levels of human activities. Permanent losses of forage would also occur as a result of land disposals or exchanges. Reductions in AML could occur in HMAs where large blocks of land are either disposed of to the public or the land exchange is not in the same HMA in which the lands would be removed from public ownership.

Retaining public ownership and/or acquiring lands in wellhead protection zones would have little impact on WHB.

Permanent losses range improvement projects (RIPs) that were available to provide waters to WHB could occur as a result of land disposals or exchanges. This may result in less water being available for WHB and therefore the AML would have to be adjusted.

Any land that is acquired in an HMA may provide a benefit to WHB. The addition of formerly private lands to public lands may result in an increase in AML as these lands would now be managed by the BLM and therefore incorporated into the HMA and used by WHB.

Designation of utility corridors could provide a beneficial impact to WHB. Requiring construction of ROW in these corridors could reduce the fragmentation of the HMAs by avoiding issuance of individual ROWs that may impact the entire HMA.

Effects under Alternative A

Alternative A would be least beneficial to WHB because it has no provision for acquiring conservation easements, which could limit development and surface occupancy, which would reduce the possibility of disturbance from people and vehicles. Alternative A designates the most HMA land for disposal, 289,203 acres, and the most acres of HA for disposal, 976,143.

Effects under Alternative B

No exclusion zones would be designated under Alternative B, allowing for the greatest amount of ROW development and the greatest amount of impacts (as identified above under Effects Common to Alternatives A, B, C [Option 1], and D) on WHB. Impacts would be less than under Alternative A but greater than Alternatives C, Option 1 or D.

Effects under Alternative C

The transfer of lands to BIA, for expansion of the Ft. McDermitt Indian Reservation would not have any impacts on WHB as these lands are not located within an HMA.

Allowing for water importation and exportation projects within HMAs, that are within the perennial yield of the source basin would not have any impacts on WHB watering as water would still be available to them. Above ground construction for water conveyance in HMAs may fragment the habitat and would have a short term impact on WHB until they re-establish their routes.

The greatest amount of acreage would be excluded from ROW development under Alternative C, which would present the least amount of impacts (as identified above under Effects Common to Alternatives A, B, C and D) on WHB. Impacts from disposal actions would be less than under Alternatives A or B and close to the same as under Alternative D.

Effects under Alternative D

The transfer of lands to BIA, for expansion of the Ft. McDermitt Indian Reservation would not have any impacts on WHB as these lands are not located within an HMA.

Allowing for water importation and exportation projects within HMAs, that are within the perennial yield of the source basin would not have any impacts on WHB watering as water would still be available to them. Above ground construction for water conveyance in HMAs may fragment the habitat and would have a short term impact on WHB until they re-establish their routes.

Limiting exclusion zones to 1,199,539 acres within the WD would impact WHB less than under Alternative B but slightly more than under Alternative C. Impacts from land disposals would be less than under Alternatives A or B and the same as under Alternative C.

Wild Horses and Burros: Effects from ACEC and RNA Management (A Special Designation Area)

Effects Common to All Alternatives

No impacts are anticipated to WHB due to managing and maintaining the Osgood Mountains ACEC as it is not located within an HMA.

Effects under Alternative A

Impacts are the same as those under Effects Common to All Alternatives.

Effects under Alternative B

Impacts are the same as those under Effects Common to All Alternatives.

Effects under Alternative C

Three new ACECs would be designated under Alternative C. The proposed Raised Bog ACEC is adjacent to the Jackson Mountain HA and the Stillwater ACEC lies within the Stillwater Range HA. Given the nature of these ACEC's no impacts on WHB are expected by this designation.

Effects under Alternative D

Impacts are the same as those under Individual Effects under Alternative C.

Wild Horses and Burros: Effects from Backcountry Byways Management (A Special Designation Area)

Effects Common to All Alternatives

Short-term direct and indirect impacts of developing new BCBs in HMAs could include loss of forage and temporary displacement of WHB. Long-term impacts on WHB from newly developed BCB routes include loss of forage and reduced forage palatability because of dust on vegetation. The greatest impact on WHB would be increased disturbance and potential for harassment caused by increased levels of visitor use.

Effects under Alternative A

Currently, the only BCB in the WD is the Lovelock Caves Back Country Byway. This byway does not go through any HMAs and therefore would not have any impacts on WHB by maintaining the byway and developing public tours of the area.

Effects under Alternative B

Promoting and developing new BCBs in HMAs presents the highest potential for an increase in disturbance to WHB from humans. However, it may also provide an opportunity to educate the public on the role of free-roaming WHB in the landscape.

Effects under Alternative C

Avoiding areas that have previously received low visitor use for designations as Back Country Byways would be beneficial to WHB for those that fall within HMAs, by not increasing human disturbance.

Effects under Alternative D

Promoting and developing new BCBs in HMAs presents the highest potential for an increase in disturbance to WHB from humans. However, it may also provide an opportunity to educate the public on the role of free-roaming WHB in the landscape.

Wild Horses and Burros: Effects from National Historic Trails Management (A Special Designation Area)***Effects Common to All Alternatives***

Effects are the same as those described under Effects Common to All Alternatives in Cultural Resource Management, above.

Effects under Alternative A

Impacts are the same as those described under Individual Effects under Alternative A in Cultural Resource Management, above.

Effects under Alternative B

Impacts are the same as those described under Individual Effects under Alternative B in Cultural Resource Management, above.

Effects under Alternative C

Impacts are the same as those described under Individual Effects under Alternative C in Cultural Resource Management, above.

Effects under Alternative D

Impacts are the same as those described under Individual Effects under Alternative D in Cultural Resource Management, above.

Wild Horses and Burros: Effects from Wild and Scenic Rivers Management (A Special Designation Area)***Effects Common to All Alternatives***

There would be no effects common to all alternatives from WSR management.

Effects under Alternative A

Under this alternative, eligible river corridors would be given protection either through continued interim protective management or the development of comprehensive river management plans. Because the eligible segment of the North Fork of the Humboldt River falls within the Little Owyhee HMA, the BLM would have additional obligations to ensure that WHB use in the corridor would not degrade the values that made the segment eligible.

Effects under Alternative B

There would be no impacts on WHB resulting from WSR management objectives under Alternative B.

Effects under Alternative C

Under Alternative C, the effects on WHB resulting from WSR management objectives would be the same as those described under Alternative A.

Effects under Alternative D

Under this alternative, there likely would be no impacts on WHB from WSR management so long as WSA management, as outlined in the remainder of the RMP, are implemented. In the case that these management actions are not implemented or are removed after implementation, interim protective management measures would be implemented along the 43.4 miles of eligible WSR corridors which would cause effects identical to those described under Alternatives A and C until a new determination of NWSRS suitability is made.

Wild Horses and Burros: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

Management of Wilderness Areas and WSAs would result in beneficial impacts on WHB when they overlap with HMAs. In general, the protections afforded to these areas, such as restrictions on surface-disturbing and other disruptive activities, would reduce harassment of WHB and help maintain and improve vegetation conditions, thereby maintaining or improving the rangeland health and ensuring a TNEB. Excluding motorized vehicles and providing fewer travel ways would be beneficial to WHB. However, the wilderness land use designation could promote additional visitor use and increase the potential for disturbance.

If WSAs, not located in ACECs, are released by Congress and they are managed for other purposes there could be negative impacts on WHB from these other uses, such as mining, ORV use or ROW development.

Effects under Alternative A

There are 320,527 acres managed under WSAs that fall within HMAs under Alternative A. Impacts from wilderness and WSA management on WHB are the same as those identified under Effects Common to Alternatives A, B, C and D.

Effects under Alternative B

There are 314,906 acres managed under WSAs that fall within HMAs under Alternative B. Impacts from wilderness and WSA management on WHB are the same as those identified under Effects Common to Alternatives A, B, C and D.

Managing the eight areas identified as containing wilderness characteristics under Alternative B would be less beneficial to WHB as there would be no specific designations to enhance the wilderness characteristics that would maintain and improve vegetation conditions within these areas.

Effects under Alternative C

There are 320,527 acres managed under WSAs that fall within HMAs under Alternative C. Impacts from wilderness and WSA management on WHB are the same as those identified under Effects Common to Alternatives A, B, C and D.

Implementing specific protection measures (i.e., closed to mineral leasing, ROW exclusion zones and Priority 1 Habitat) to the six areas identified as containing wilderness characteristics would result in beneficial impacts on WHB. In general, the exclusions on mining and ROW development would help maintain and improve vegetation conditions, thereby maintaining or improving the health of the range and allowing for a TNEB.

Effects under Alternative D

There are 314,906 acres managed under WSAs that fall within HMAs under Alternative D. Impacts from wilderness and WSA management on WHB are the same as those identified under Effects Common to Alternatives A, B, C and D.

Wilderness characteristic management actions benefit WHB similarly to those identified under Alternative C, but less acreage would be excluded from mining and ROW development than proposed under Alternative C.

Wild Horses and Burros: Effects from Watchable Wildlife Viewing Sites Management (A Special Designation Area)

Effects Common to All Alternatives

Establishing new WWVs could bring more people to areas where WHB are located, which could indirectly increase harassment of WHB and degradation of forage through trampling and vehicular travel.

Effects under Alternative A

Impacts are the same as those under Effects Common to All Alternatives.

Effects under Alternative B

Impacts are the same as those under Effects Common to All Alternatives.

Effects under Alternative C

Impacts would be slightly less than under Effects Common to Alternatives A, B, C and D because Action C-WWV 1 would manage the area by trying to avoid increasing traffic to remote areas.

Effects under Alternative D

Impacts are the same as those under Effects Common to All Alternatives.

Wild Horses and Burros: Effects from Public Health and Safety Management

Effects Common to All Alternatives

Cleaning up newly discovered dump sites could temporarily impact WHB by fencing off part of an HMA during cleanup and restoration of that site. Actions to correct and clean up hazards and to protect closed sites would also help protect WHB from possible injury or contamination and would improve the vegetative conditions in the long term within those sites.

Wild Horses and Burros: Effects from Sustainable Development Management

Effects under Alternative A

Sustainable development is not addressed under Alternative A; therefore, no impacts are anticipated to occur to WHB under this alternative.

Effects under Alternative B

The lands under consideration for sustainable development already have activities that may or may not have impacts on WHB. Because of this, continued use of these lands may not have much additional impact, unless the future uses require ROWs, or attracted additional people and OHV use or similar activities that could increase the chance of harassment or disturbance to herds or degrade rangeland conditions.

Short-term impacts from issuances of ROW include the temporary removal of forage and displacement of WHB. Long-term direct and indirect impacts on WHB from site-specific lands and realty actions include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment from increased levels of human activities.

Permanent losses of forage and range improvement projects (RIPs) could occur as a result of land disposals or exchanges. Reductions in AML could occur where large blocks of land are either disposed to the public or the land exchange is not in the same area as the HMA losing the land.

Effects under Alternative C

Impacts on WHB from land disposals and issuances of ROWs are the same as identified under Alternative B.

Effects under Alternative D

Impacts on WHB from land disposals and issuances of ROWs are the same as identified under Alternative B.

Wild Horses & Burros: Cumulative Effects

Past and Present Actions

Past and present impacts resulting from livestock grazing includes competition for available forage. These impacts are more severe in areas of concentrated grazing by livestock. From 1982 to the present, current land use plans have employed management strategies to reduce concentrated

grazing and have improved conditions in areas by progressing towards or meeting standards for rangeland health standards. Livestock grazing management, including implementation of various grazing management systems and rest rotation strategies, have reduced impacts on WHB within HMAs. Minerals, lands and realty, renewable energy and recreation activities have also impacted WHB by removing vegetation necessary for forage. Implementing BMPs, SOPs, project specific mitigation measures, and permit stipulations have reduced impacts on WHB by requiring reclamation of disturbed areas for those projects located within HMAs. Few impacts have occurred from recreation use. Unrestricted OHV use has increased the potential for humans to interact with WHB herds. Wildfires have burned rangeland causing WHB to relocate into new areas. Emergency stabilization and rehabilitation efforts have reduced impacts on WHB by seeding burned areas. However, WHB are subject to removal or are restricted from seeded areas until rehabilitation resource objectives are met. Gathering excess WHB above AML has improved rangeland conditions.

Reasonably Foreseeable Actions

Achieving land health standards and maintaining thriving ecological conditions within HMAs would reduce the size and number of areas of concentrated livestock and WHB grazing. Increasing minerals, lands and realty, renewable energy, and recreation activities would continue removal of WHB forage if they are located within HMAs. These impacts would be reduced by implementing BMPs, SOPs, required mitigation measures, and permit stipulations to lower impacts and reclaim areas. Habitat restoration and management of priority wildlife habitat, priority watersheds, and special status species habitat would include use restrictions, thereby reducing disturbance within those HMAs. Impacts would vary based on which alternative was selected and the amount of acres identified with use restrictions. Removing excess WHB to achieve AML would ensure a thriving ecological balance is maintained within HMAs. Construction of fuel breaks with emphasis on landscape scale treatments would reduce fire spread potential, thereby protecting HMAs from large wildfires. ES&R treatments would also stabilize conditions in HMAs over time post fire.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Incremental impacts on WHB should gradually decrease based on achieving standards for rangeland health or not permitting livestock grazing. Other management strategies and permit requirements, including implementation of mitigation measures and permit stipulations applicable to minerals, lands and realty, and renewable energy development to reduce impacts on vegetation and reclaim disturbed areas would maintain and/or restore thriving ecological conditions within HMAs. Incremental impacts would vary based on the size and location of disturbance that occurs within HMAs. Management of OHV travel would reduce impacts on WHB based on the number of acres of open, limited, or closed to OHV use. OHV travel management and use restrictions in priority wildlife habitat areas, priority watersheds, sensitive species management, and ACEC management would protect HMA by limiting uses in areas where HMA overlap these areas. Continued removal of excess WHB above AML would maintain a thriving natural ecological balance within HMAs. Landscape scale fuel breaks would afford protection of HMAs from wildfire. Based on the Wild and Free-Roaming Horse and Burro Act of 1971, BLM policy and proposed management actions, a thriving natural balance would continue to exist as cumulative effects of multiple uses within HMA would not cause unacceptable impacts or deterioration of rangeland. Overall incremental impacts

would range from low to moderate and would be dependent on the location and size of disturbance within HMAs, the types of uses and the degree of use restrictions associated with HMAs and managing herds to AML.

4.2.12 Wildland Fire Management

Summary

Protecting priority wildlife habitats, priority watersheds, cultural resources, commercial, mineral development, and recreation infrastructure would affect fire suppression priorities by increasing demands for fire suppression resources and fuel treatments. Conflicts could result as available firefighting resources become overextended. This could increase the costs of firefighting, if additional resources are needed. Overextended firefighting resources could also affect availability of firefighting resources locally, regionally, or nationally if they were diverted from other suppression efforts to the WD. A similar trend is occurring nationwide. Because Alternative C generally has the most areas with priorities for protection, it has the greatest potential to increase demands and costs for fire suppression resources and fuel treatments protection priority.

Alternative A provides the most access for fire suppression through travel management, but the access provided by the number of acres designated as open to OHV travel would also have the highest risk for human-caused fire, compared to other alternatives. This alternative would have the fewest fire suppression priority areas. Mineral and energy development would likely increase the number of facilities needing fire suppression.

Alternative B has the greatest potential to increase the Wildland Urban Interface areas (WUI) as more public acres would be available for land disposal. The risk of human-caused fire would be lower due to fewer acres designated open to OHV travel compared with Alternative A. Alternative B has more open acres than Alternatives C and D. Alternative B has the most potential for increased commercial and mineral development infrastructure that would require fire suppression protection.

Alternative C would close or restrict the most areas to OHV travel, which would result in lowering the potential for human caused fires and reduce a major source of weed spread. Option 2, would eliminate grazing and both options would eliminate chemical and prescribed fire treatments for weeds and to reduce fuels. Potential for fine fuel buildup would occur because of the lack of chemical weed treatment or prescribed fire, which could result in increased size and intensity of fires. This alternative has the largest number of priority protection areas which would increase fire suppression complexity to prioritize fires.

Alternative D encourages recreation more than Alternatives A and C but has fewer acres designated open for OHV travel. Additional priority protection areas would increase priorities for fire suppression, causing prioritization conflicts. ES&R actions to restore vegetation conditions, and prevent or eliminate the spread of noxious weeds, invasive plants, and to rehabilitate burned areas would all improve FRCC in the long run. These actions would also support the return of natural fire regimes, along with reducing the risks from wildland fire to the public and other resources.

Large Fire Suppression Costs

The BLM conducts a relative comparison on the effects plans would have on the cost of suppressing large wildland fires. The BLM identifies activities that may affect the cost of fire suppression:

- Establishment of vegetation management objectives or treatments that leave land or resources at greater risk of damage from wildfire and therefore increase fire size and suppression costs;
- Restrictions on the application of allowing conditional fire suppression management for a benefit;
- Restrictions on suppression activities to meet other resource objectives;
- Actions that promote the expansion of invasive plants that alter fire regimes; or
- Actions that may limit suppression access, such as road decommissioning to meet other resource objectives.

Additionally, the WD has identified the need to protect commercial or recreational development, resources, or special areas as a factor that would increase the need for fire suppression.

Under all alternatives, large wildland fire suppression costs are expected to increase due to increasing operating costs (fuel, personnel, equipment, and supplies), additional development outside the control of BLM managers, and increasing populations. The following assessment of the impacts of the RMP actions that differ between alternatives, using Alternative A as the base line. The effects are described in more detail in the effects sections below.

Alternative A

Alternative A would increase in the cost of large wildland fire suppression as no conditional fire suppression areas were identified for managing fire for a benefit. However, these fire suppressions costs would be overall lower as there are fewer areas identified for suppression priority based on resource values. Such areas include ACECs, PMUs, and municipal watersheds.

Alternative B

Alternative B would include conditional fire suppression areas for a benefit. This alternative would have no ACEC priority suppression areas; however, some additional priority suppression areas would be included.

Alternative C

Alternative C would increase the cost of large wildland fire suppression the most. While it restricts many of the activities that cause a spread of weeds (particularly Option 2) or development that needs protection, it also limits the tools available to reduce fuel, control weeds, and suppress fires. It increases fire suppression on the most areas. Alternative C has the most priority suppression areas based on resource values and no conditional fire suppression areas for a benefit.

Alternative D

Alternative D would have the second most increase in the cost of large wildland fire suppression. It restricts vegetation management actions somewhat, has protection for wildlife habitat and watersheds, and allows development that would increase suppression priorities. The cost increase would be lower than under Alternative C because more fire suppression and fuel reductions tools can be used.

Methods of Analysis

Methods and Assumptions

This analysis is based on the following methods and assumptions:

- Fuel reduction treatments and emergency stabilization and rehabilitation (ES&R) would be effective;
- VRM I and II would restrict the location or the number of fuel treatments;
- Fire suppression is an emergency action and some requirements for ground- and surface disturbing activities do not apply to fire suppression;
- Population growth and development of SRMAs would cause an increase in use of public lands; and
- Mineral and energy development would increase access and number of facilities that require protection.

Wildland Fire Management: Effects from Air Quality Management

Effects Common to All Alternatives

Modeling and managing prescribed burning may limit the amount of prescribed burning in a given year or the number of acres treated.

Implementing strategically placed fuel treatments would reduce fire size and smoke emissions and would reduce acres burned by wildland fire in the long term and make fire suppression efforts more effective.

Effects under Alternative A

Complying with air quality regulations, BLM policies, and prescription plans would affect wildland fire through smoke management objectives. Prescribed fire activities could be shut down, delayed, or altered based on coordination with state and other agencies and other smoke management issues. The amount of acres treated with prescribed fire may also be reduced. Constructing fuel breaks, if effectively implemented, would cause some fires to be more easily suppressed, to burn at lower fire intensity, or be smaller.

Effects under Alternative B

Effects under Alternative B would be the same as described under Alternative A.

Effects under Alternative C

Effects would center on smoke modeling for wildfires. There would be no prescribed fire or conditional suppression areas for a benefit under this alternative. Few impacts from air quality management would occur.

Effects under Alternative D

Effects on wildland fire management from air quality management actions under Alternative D would be the same as those described under Alternative A.

Wildland Fire Management: Effects from Geology Management

Effects Common to All Alternatives

There would be no impacts on fire management identified.

Wildland Fire Management: Effects from Soil Resources Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from soil resource management.

Effects under Alternative A

Soil management would include implementing BMPs and SOPs (Appendix B) to reduce soil erosion for fire rehabilitation projects where they occur. Areas with easily erodible soils would be prioritized for emergency stabilization treatments.

More use of public lands could increase the potential for human caused fire, exposing more areas containing easily erodible soils and increasing ES&R costs to protect these soils from erosion.

Effects under Alternative B

Increasing population growth combined with increased uses on public lands would increase the potential for human caused fires exposing more areas containing easily erodible soils. The resulting impacts would include increasing ES&R treatments and associated costs to protect these soils from erosion.

Effects under Alternative C

Travel restrictions on OHV use would reduce the potential for human caused fires. Fewer areas containing erodible soils would be burned and demands for ES&R to protect these soils would be less.

Effects under Alternative D

Effects on wildland fire management would be similar to those under Alternative A.

Wildland Fire Management: Effects from Water Resources Management

Effects Common to All Alternatives

Strategies to protect surface water quality and quantity could limit fire suppression operations. Restrictions on use and location of retardant or use restrictions applicable to heavy equipment would limit fire suppression effectiveness in areas. Removal of hazardous fuels by constructing fuel breaks would be prioritized to protect areas containing municipal water supplies or sensitive species habitat.

Effects under Alternative A

Similar to effects common to all alternatives. Further development of water sources on public lands could affect wildland fire management suppression efforts by increasing the availability of water.

Effects under Alternative B

Priority watersheds would become priority areas for fire suppression, increasing suppression demands to protect resource values and any multiple use infrastructure located within the priority watersheds. BMPs and mitigation measures designed to reduce impacts on water sources may limit the location and availability of water to be used in fire suppression efforts and restrict the location of retardant lines.

Effects under Alternative C

Priority watersheds management would increase fire suppression priorities to protect these areas. BMPs and mitigation measures designed to reduce impacts on water sources may limit the location and availability of water for suppression use. These measures would be more intensive under this alternative. Priority watershed areas would increase suppression demands to protect resources, however limited infrastructure would be in place due to exclusion zones, reducing the need for infrastructure protection.

Effects under Alternative D

Effects of priority watershed management on wildland fire management would be similar to Alternative B. Use restrictions in priority watersheds would limit construction of infrastructure and fire suppression demands to protect property. Using water for suppression could temporarily reduce water supply in reservoirs, springs and creeks. Based on implementation of fire management BMPs and SOPs, these impacts would be short term and water supply should recover.

Wildland Fire Management: Effects from Vegetation—Forest and Woodland Products Management

Effects Common to All Alternatives

Monitoring forest health and establishing an early warning system for insect and disease would help meet desired future conditions for fire ecology by ensuring timely treatments to restore natural conditions and reduce fuels in areas negatively affected by forest health issues. Pest control treatments would reduce insect infestations and subsequently reduce dead fuel loadings.

Effects under Alternative A

Effects include elevating the priority for suppression of fire in broadleaf woodland habitats and the Stillwater Range, which could increase the demand for fire suppression resources.

Protecting healthy woodlands would require fuel breaks to protect stands. Prescribed fire would promote woodland health and reduce the amount of dead fuel in areas, thus reducing fire intensity and severity.

Developing management actions to protect harvest areas from disease would, in the long term, would reduce the amount of dead fuel in these areas. Management for allowing conditional fire suppression management for a benefit would not be implemented, consequently fuels buildup and decline stand health would occur.

Effects under Alternative B

Effects would be similar to those described for Alternative A; however, allowing the use of wildland fire to restore stand health and structure, would allow changes to occur sooner and would increase the size of treated areas compared to using fuel reduction treatments.

In woodlands, reducing fuels would reduce fire severity and intensity, leading to more successful fire suppression when needed.

Allowing burned areas to be salvage harvested would reduce fuel loadings and may reduce fire size and intensity in the long term. Removing dead trees would improve public safety as well as firefighter safety, as falling dead trees are one of the most common causes of injury during fire suppression.

Effects under Alternative C

In woodlands, achieving stand health and structure objectives would reduce fuels, which reduces fire severity and intensity, and would lead to more successful fire suppression when needed. Allowing natural fire regimes to return to the landscape would slow the reduction of FRCC in areas because prescribed fire, allowing conditional fire suppression management for a benefit, and chemical fuel treatments would not be used. Discontinued harvesting of pinyon pine could increase fuels, which could increase fire intensity and severity there. Recognizing stand encroachment as a natural process could increase pinyon/juniper, thereby increasing fuel loads.

Protecting old growth forests could increase the suppression priority for those areas.

Effects under Alternative D

Effects would be similar to those under Alternative B. Designating conditional fire suppression areas for a benefit within the Stillwater range would contribute to forest health within the range.

Wildland Fire Management: Effects from Vegetation—Invasive and Noxious Species Management

Effects Common to All Alternatives

During fire suppression, the requirement to wash heavy equipment may limit the spread of weeds in areas where fire suppression operations occur. In the long term, limiting the spread of weeds would reduce fine fuels.

Weed and invasive species control would have a beneficial effect on fire rehabilitation because treatment success would improve, as it would result in less competition for native or seeded species after a fire.

Effects under Alternative A

Eradicating, suppressing, controlling, preventing, or retarding the spread of any noxious weeds and annual invasive species would promote the success of fire rehabilitation projects by allowing seeded species to become established and to better compete with weeds or annual invasive species. Successful emergency stabilization and rehabilitation projects would help to restore historic fire regimes and to improve FRCC in the long term.

Effects under Alternative B

Effects from weed management would be similar to those under Alternative A; however, implementing a cost/benefit analysis would, in some cases, reduce costs and allow implementation of more effective methods to control weeds and invasive species for fire rehabilitation and fuel treatments.

Newer techniques and an additional focus on education and prevention of weed spread could make this alternative more effective, providing greater benefits to FRCC and natural fire regime.

Effects under Alternative C

Many of the benefits described in Alternative B still would occur, though to a much lesser degree. Due to the limitations on using chemical treatments and prescribed fire, weed control, would be less effective causing a buildup of light fuels. Most weeds and invasive plants are difficult to control on a large scale without herbicides, so the benefit of improved FRCC and a return to a natural fire regime would be slowed considerably.

Restricting the use of chemicals to control noxious weeds would slow the success of fire rehabilitation projects because weeds would likely get established and spread, competing with seeded species.

Effects under Alternative D

Effects would be the same as those described for Alternative A.

Wildland Fire Management: Effects from—Chemical and Biological Control

Effects Common to All Alternatives

There would be no effects common to all alternatives from chemical and biological control management.

Effects under Alternative A

Use of chemicals and biological agents to control pests (weeds, invasive species, and harmful insect activity) would improve rangeland health, would allow for improved success of fire rehabilitation, would provide for long-term maintenance of fuel breaks, and would reduce fire intensity and spread.

Effects under Alternative B

Effects would be similar as those described in the weeds management section of Alternative A. Fuel breaks using chemical treatments would be less costly and more effective than biological controls.

Using biological controls for fuel breaks would be more costly, would require more monitoring, and would take longer to achieve resource objectives.

Effects under Alternative C

Effects would be the same as those described in the weeds management section of Alternative C. Not using chemical pesticides could allow for degrading stand health through more weeds, invasive plants, and harmful insects activity and could increase the amount of dead fuels. Fuel loadings could complicate suppression efforts and increase fire intensity and severity.

Effects under Alternative D

Effects would be the same as those described in the weeds management section of Alternative B.

Wildland Fire Management: Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Achieving land health standards would, by definition, help to restore FRCC to more natural levels.

Achieving fire rehabilitation objectives would also help to restore FRCC. Implementing vegetation treatments to improve vegetation community health and protect vegetation communities may reduce fire intensity and severity by removing biomass. Seeding burned areas would help restore FRCC.

Restoring and improving degraded sagebrush habitats would improve FRCC by reducing cheatgrass.

Cheatgrass is the main reason that FRCC III is in most of the WD and contributes to extreme fire behavior, severe fire effects, extensive burned areas, and a loss of the historic fire regime in sagebrush vegetation types.

Effects under Alternative A

Managing for healthy and productive plant communities would improve FRCC and would restore and maintain the natural fire regime. In the short term, grazing reduces fine fuels, which would reduce fire spread, when controlled in manageable units with the proper infrastructure (water or fencing) to manage livestock use.

Fire rehabilitation would benefit rangelands when appropriate species are used and when vegetative cover is restored before weeds and invasive species become established. This would improve FRCC and would promote restoration of natural fire regimes. Resting areas from grazing after fire fires would help ensure appropriate vegetative establishment and would further the likelihood that weeds and invasive species would not become established.

Effects under Alternative B

Effects described in Alternative A would occur in Alternative B. In addition, improving FRCC III to FRCC II on 70,000 acres would benefit rangelands by improving conditions and moving the area toward natural fire regimes. Eradicating cheatgrass, establishing desirable perennial species where possible, and rehabilitating degraded sagebrush habitats would improve FRCC III. Reestablishing desired vegetation would help maintain the improved FRCC and would prevent or slow future establishment of noxious weeds and invasive plants that adversely affect FRCC.

Allowing conditional fire suppression areas for a benefit would improve the ecological health of vegetation communities and would provide long-term benefits by reducing fuels build up, fire spread, and improve the health of certain fire tolerant species.

Allowing conditional fire suppression management for a benefit would improve the ecological health of vegetation communities and would provide long-term benefits by reducing fuels buildup and fire spread.

Prescriptive grazing is another tool to achieve resource objectives, reduce biomass, and modify fire behavior and spread. In the short term, grazing reduces fine fuels, which would reduce fire spread, when controlled in manageable units with the proper infrastructure (water or fencing) to manage livestock use.

Effects under Alternative C

Option 1

Eliminating the use of chemicals and prescribed fire to achieve rangeland vegetation goals, particularly those related to cheatgrass, would slow beneficial effects or possibly would make them unachievable.

In the short term, grazing reduces fine fuels, which would reduce fire spread, when controlled in manageable units with the proper infrastructure (water or fencing) to manage livestock use.

Fire rehabilitation would be more costly as chemicals would not be used, which is particularly important in controlling the spread of weeds. ES&R costs would increase because seeding burned areas would require native seed, which is more costly and difficult to acquire in suitable amounts.

ES&R short-term success would be less effective as native species take longer to establish. ES&R treatment success of seedlings would be higher as rehab areas would be closed to livestock/WHB grazing following fire, for a period of 5 years. Also, management actions to improve approximately 70,000 acres from FRCC III to FRCC II are provided under this alternative. Availability and effectiveness of native seed would make fuel treatments (green strips) less effective and more expensive. Suppression priorities would increase under this alternative because healthy and recovering sagebrush stands would become suppression priorities.

Option 2

Effects would be similar to those under Option 1. Eliminating grazing could reduce the spread of noxious weeds and invasive species, slightly offsetting the effects of not using chemical treatments. Eliminating prescriptive grazing would increase fine fuels in areas, promoting fast moving fire spread. Success of fire rehabilitation projects would increase as seedlings would recover over the long term without grazing. Overall FRCCs would likely improve in areas that have been treated.

Effects under Alternative D

Effects would be the similar as those described for Alternative B. Although there would be no specified time frame for resting burned areas from grazing.

Allowing conditional fire suppression areas for a benefit would improve the ecological health of vegetation communities and would provide long-term benefits by reducing fuels build up, fire spread, and improve the health of certain fire tolerant species. Allowing native and nonnative seed species in ES&R would enhance success and accelerate achievement of objectives, which would improve FRCC.

Wildland Fire Management: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Implementing mitigation measures to reduce potential adverse impacts on wetlands and riparian areas may reduce the effectiveness of suppression tactics by restricting operation of heavy equipment and use of retardant in these areas.

Effects under all alternatives would be similar to those described for water resource management.

Wildland Fire Management: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

Applying land health standards would have the same effect as those described under rangeland management. Land health standards, standard operating procedures, and mitigation measures could restrict the types of suppression actions and conditional fire suppression management for a benefit within certain wildlife habitat types. These actions include limiting back fires in sagebrush habitats.

Effects under Alternative A

Protecting important wildlife habitat areas would prioritize fire suppression in those areas. Pre-disturbance inventories for nesting migratory birds and seasonal restrictions and mitigations could eliminate or change timing of prescribed fire and other fuel treatments.

Applying land health standards would help to restore FRCC to more natural levels. In some areas where fire occurrence or behavior is more frequent or more extreme due to poor habitat conditions, achieving land health standards would reduce fire risks, would reduce the amount and severity of wildland fire, and would improve suppression success.

Effects under Alternative B

The effects would be similar to those described under Alternative A.

Developing mitigation measures to avoid active nests could eliminate, affect location, or change timing of prescribed fire treatments, reducing their effectiveness, increasing costs, or eliminating them altogether.

Using prescribed fire, allowing conditional fire suppression management for a benefit, and other treatments to restore, protect, and improve wildlife habitat would help to restore the historic fire regime and reduce fuels and FRCC where treatments occur.

Effects under Alternative C

Alternative C would prioritize fire suppression to all priority 1 and 2 habitat areas. Construction of fuel breaks would be restricted as prescribed fire and use of herbicides would not be allowed.

Effects under Alternative D

The effects would be similar to those described under Alternative C.

Fire suppression priorities to reduce wildfire size would be applied to priority wildlife habitat areas.

Using prescribed conditional fire suppression management for a benefit and other vegetation manipulation treatments to restore, protect, and improve wildlife habitat would help to restore the historic fire regime, reduce fuels, and help improve FRCC where treatments occur.

Wildland Fire Management: Effects from Special Status Species Management

Effects Common to All Alternatives

Protections for some special status species, such as protecting raptor nesting sites and ferruginous hawk nests, may limit the strategic placement of fuel treatments to reduce fire risk and protect habitat. Avoiding tree control around ferruginous hawk nests would prevent construction of fuel breaks or fuel reduction treatments where the nests occur.

Implementing standard operating procedures, mitigation measures, and conducting surveys or inventories before an activity to protect sensitive species habitat could affect the locations or timing

of fuel treatments. However, these actions benefit sensitive species by protecting them against adverse impacts.

Effects under Alternative A

Fuel treatments could be restricted in some instances based on results of the pre-disturbance inventories for sensitive wildlife species. Implementing mitigation measures to protect sensitive species, would also limit the size, location, and timing of fuel treatments, making them less effective and more expensive or eliminating them altogether.

Effects under Alternative B

This alternative has no Priority 1 wildlife habitat so fire suppression priorities would cover fewer acres as compared to Alternatives C and D.

Effects under Alternative C

Fire suppression priorities would increase as priority wildlife and watershed areas would be elevated as priority suppression areas. The guidelines for sage-grouse protection are the most restrictive and cover the widest area compared to the other alternatives. Under Alternative C, fuel treatments to protect SSS habitat would be restricted as prescribed fire and chemical treatments would not be implemented. There would be more areas subject to fuel treatment restrictions, such as size and location of treatments as there are more priority wildlife habitat areas and priority watershed areas under this alternative. However, there would be more opportunities to increase the number of strategically placed fuel treatments in order to protect priority wildlife and watershed areas.

Effects under Alternative D

Impacts would be similar to Alternative C. Priority sage-grouse habitats, priority watersheds and general sage-grouse habitat areas would be prioritized for fire suppression. Fewer restrictions for placement of fuel treatments would apply compared to Alternative C.

Wildland Fire Management: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Management of WHB includes removing or excluding horses and burros from rehabilitated areas, which would promote long-term success of fire rehabilitation treatments by reducing the grazing and trampling of newly established vegetation.

Effects under Alternative A

Impacts would be the same as those identified under Effects Common to All Alternatives.

Effects under Alternative B

Impacts would be the same as those identified under Effects Common to All Alternatives.

Effects under Alternative C

Maintaining unobstructed landscapes by removing fences would improve access and fire suppression efficiencies. More temporary fencing may be needed for fire rehabilitation treatments as fewer fences on the landscape would be available to tie in fire rehabilitation fencing.

Effects under Alternative D

Some fences would be removed, which would improve access for fire suppression.

Wildland Fire Management: Effects from Wildland Fire Management

Effects Common to All Alternatives

Using a decision support process would focus efforts where needed most. The decision support process includes the fire management plan suppression objective and strategy, WFDSS. WFDSS would also help ensure that wildland fire suppression did not cause undue harm to threatened resources, such as biological and cultural resources. Minimum impact suppression tactics would reduce unanticipated effects on other resources during fire suppression. Compliance with interagency standards and policy guidance, including WFDSS, would focus suppression efforts on those that would be most effective and would provide for firefighter safety.

Continuing to update fire management strategies annually would ensure that fire management resources are used efficiently to meet fire management objectives within the WD.

Reducing fuels in the WUI area would provide defensible space and locations where fires can safely be suppressed would reduce the risks to public safety and property, would maintain firefighter safety, and could reduce fire suppression costs.

In the long term, use of fuel treatment tools would improve public safety, would reduce property losses, and would improve vegetative health. Additionally, natural fire regime would be maintained in some areas by protecting vegetation communities that are closer to historical species and density.

Rehabilitating degraded rangeland could improve FRCC by promoting revegetation and soil stabilization. Seeding would deter the establishment and spread of cheatgrass, which would help to reestablish the natural fire regime and reduce fire severity in those areas.

Public education efforts and use of restrictions and closures when warranted would reduce the number of human-caused wildland fire. In the long-term, this could reduce the number of acres burned.

Effects under Alternative A

Developing a response to wildland fires based on social, legal, and ecological consequences of the fire would help to prioritize wildland fire suppression actions. Following established plans and guidance would maintain wildland firefighter safety. Issuing fire restrictions would help to minimize human-caused fires.

Reducing hazardous fuels in WUI would make emergency response to wildland fires safer for firefighters and would reduce the risk to life and property, as would developing and implementing

wildland fire protections plans and community assistance strategies. There are currently 212,350 acres of WUI in FRCC III.

Rehabilitating degraded rangelands would benefit rangeland by improving land health. This would be done by improving FRCC from higher FRCC to lower FRCC.

Collaborating and promoting interagency cooperation would maximize the effectiveness of wildland fire management activities and results. Researching fire issues would provide information to improve suppression tactics and firefighter safety and would provide additional tools for reducing FRCC and restoring natural fire regimes.

Effects under Alternative B

Effects would be the same as those described for Alternative A, except 110,167 acres would be designated for allowing conditional fire suppression areas for a benefit. This would slightly reduce the amount of fire suppression necessary, if wildland fire were burning in these areas within prescription. Allowing fire for a benefit would improve rangeland health in appropriate areas, which would improve FRCC in the long term.

Effects under Alternative C

Effects would be the same as those described for Alternative A. No benefits would occur from allowing fire. More demand for fuel treatments would occur in lieu of allowing conditional fire suppression management for a benefit.

Effects under Alternative D

Effects would be the same as those described for Alternative B.

Wildland Fire Management: Effects from Cultural Resources Management

Effects Common to All Alternatives

Fire suppression tactics that could affect cultural resources would be reviewed on a case by case basis. Heavy equipment may be prohibited in culturally sensitive areas. Mitigation measures to protect cultural resources from wildland fire may require more firefighter resources to install sprinkler systems, wrap buildings, or install fuel breaks.

Effects under Alternative A

Protecting historic landscapes with VRM II would have the effects described under visual resources management, below.

Effects of maintaining and protecting pinyon and juniper are discussed under woodland forest and woodland products under Alternative A.

Suppression tactics could be altered to accommodate protection of cultural resources. Use of heavy equipment would be restricted in sensitive areas.

Implementation of fire rehabilitation treatments may be delayed until cultural resource inventories are completed. Fuel treatments could be restricted in culturally sensitive areas and within settings of the California historic trail.

Effects under Alternative B

Effects of maintaining and protecting pinyon and juniper are discussed under woodland forest and woodland products under Alternative B. Areas for allowing conditional fire suppression areas for a benefit in the Stillwater Range poses a risk to cultural resources that could increase fire prescription complexity and or destroy cultural resources.

Effects under Alternative C

Protecting historic landscapes with VRM II would have the effects described in the visual resources management section, below. Alternative C would protect the most areas, when compared to other alternatives, so the effects from cultural resources management would be the greatest in this alternative.

Effects of maintaining and protecting pinyon and juniper and of thinning all woodland types are discussed under the woodland forest and woodland products section of Alternative C.

Developing a cultural resources sensitivity model would improve fire suppression by identifying sensitive areas to be avoided during suppression of wildland fires before suppression is needed.

Effects under Alternative D

Effects of maintaining and protecting pinyon and juniper and thinning all woodland types are discussed in the woodland forest and woodland products section under Alternative B.

Wildland Fire Management: Effects from Tribal Consultation

Effects Common to All Alternatives

Tribal consultation would affect installation of fuel breaks as treatments may be restricted in areas that have Native American religious importance.

Effects under Alternative A

Impacts would be the same as identified under Effects Common to All Alternatives.

Effects under Alternative B

Using prescribed fire and allowing conditional fire suppression management for a benefit may be precluded in areas that have sensitive Native American religious values.

Effects under Alternative C

Impacts would be the same as those identified under Effects Common to All Alternatives.

Effects under Alternative D

Impacts would be the same as those identified under Alternative B, but, with fewer areas on the landscape available for allowing conditional fire suppression management for a benefit, fewer acres may be precluded due to Native American religious importance.

Wildland Fire Management: Effects from Paleontological Resources Management

Effects Common to All Alternatives

Management of paleontological resources would have little effect on fire management because the actions proposed do not affect fire suppression, use of fuel treatments or ES&R.

Wildland Fire Management: Effects from Visual Resources Management

Effects Common to All Alternatives

Managing to meet VRM objectives may limit the size and location of fuel breaks.

Effects under Alternative A

VRM I and VRM II areas may limit fuel treatments, such as reducing fuels through cutting or chipping and ES&R treatments in some areas. Limitations would include blending disturbance lines or relocating projects to areas having fewer visual impacts.

Effects under Alternative B

Effects of VRM classification on wildland fire would be similar to Alternative A. Alternative B has more acres of VRM II areas compared to Alternative A. Fuels and ES&R treatment restrictions would incrementally increase due to the amount of designated VRM II acreage.

Effects under Alternative C

Effects of VRM classification on wildland fire are discussed in detail in Alternative A. Alternative C has almost ten times as many acres in VRM II as under Alternative A. This alternative would have the greatest effects on fuels and ES&R with respect to location and appearance of treatments from visual resource management.

Effects under Alternative D

Effects of VRM classification on wildland fire are discussed in Alternative A. Effects would be similar to those under Alternative C, although Alternative D has about ten percent fewer acres in VRM II.

Wildland Fire Management: Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

Management of cave and karst resources would have minimal effects on fire management. Some infrastructure, such as interpretive signage or kiosks may elevate suppression priorities to protect these structures.

Wildland Fire Management: Effects from Livestock Grazing Management Common

Effects Common to All Alternatives

Managing allotments to meet land health standards would reduce fuel loads, fire intensity, and size in some areas. Achieving fire rehabilitation objectives would re-establish rangeland, providing long term benefits for grazing. Closing areas to livestock grazing that have been rehabilitated after a fire would help ensure the establishment of seeded vegetation and would improve rehabilitation success. These benefits would also improve FRCC in the long term.

Effects under Alternative A

The effects of grazing management would be the same as those for rangeland management. Initiating and managing grazing systems to meet land health standards would reduce fine fuels and deter invasive species, which would reduce fire intensity and spread. Closing burned areas to livestock grazing following a fire would help promote the fire rehabilitation success of seeded vegetation. Permittee (livestock operator) requests for fuel reduction treatments are expected to increase.

Effects under Alternative B

The effects would be the same as those under Alternative A. Management emphasis on installing range improvements to achieve resource objectives may hamper suppression operations through construction of fences. However, more water sources may be developed providing additional water for suppression operations.

Effects under Alternative C

Option 1

The effects of grazing management would be the same as those for rangeland management.

Option 2

Eliminating grazing would reduce the spread of cheatgrass in areas because cheatgrass is spread by grazing.

Effects under Alternative D

Effects would be the same as those under Alternative A.

Prescriptive livestock grazing could be used for fuel breaks, which would reduce fire intensity and spread.

Wildland Fire Management: Effects from Minerals Management

Effects Common to All Alternatives

Construction of mine infrastructure would increase suppression priorities to provide public safety and protect property. Reclaimed sites could serve as fuel breaks for fire suppression and protect resources. Active mines may also provide additional suppression resources (equipment) and water

sources. Mines along with oil, gas, and geothermal development would improve access for fire suppression activities. Improved access may also increase the potential for human caused fires.

Effects under Alternative A

Impacts would be the same as those identified under Effects Common to All Alternatives.

Effects under Alternative B

Effects described as common to all alternatives would occur. Improved access combined with increased potential for human caused fire would occur from more acres available for mineral development.

Effects under Alternative C

Facilities constructed for mineral development would not be as extensive as other alternatives, so there would be fewer operations and associated infrastructure that need fire protection. Fewer access roads would be constructed for mining that could also be used for fire management access. The potential for human caused fire would be lower under Alternative C.

Effects under Alternative D

This alternative has fewer acres open to mineral development than under Alternatives A and B.

Fewer facilities would need fire suppression protection.

Wildland Fire Management: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

Providing for dispersed recreation may increase the use of public lands and consequently the risk of human-caused fires. Recreation developments such as campgrounds would provide infrastructure and could increase public use and increase suppression priorities and demand for firefighting resources.

Effects under Alternative A

Protecting recreation areas and associated infrastructure would elevate fire suppression priorities and demand for fire resources in these areas. Protecting SRMAs and infrastructure would increase the need for strategically placed fuel breaks.

Effects under Alternative B

This alternative is more public use intensive and more emphasis would be placed on developing SRMAs. More demand for fire suppression resources would occur.

Facilities associated with future SRMAs and their management would require fire protection similar to the wildland urban interface.

Effects under Alternative C

Fewer SRMAs would be designated under Alternative C, so fewer recreation facilities would require fire protection. Public land recreation use may be slightly less due to fewer SRMAs, reducing the potential for human-caused fires compared to other alternatives.

Effects under Alternative D

Facilities associated with SRMAs and their management would require fire protection similar to Alternative B.

Wildland Fire Management: Effects from Renewable Energy Management

Effects Common to All Alternatives

Construction of renewable energy projects would increase suppression priorities providing for increased protection of infrastructure, public safety and improved access for fire suppression. Improved access may also increase the potential for human caused fires. However, BMPs, SOPs, and special mitigation measures would be implemented to minimize impacts.

Effects under Alternative A

Existing exclusion areas would continue to be managed as suppression priority areas.

Effects under Alternative B

Alternative B allows for the designation of 716,528 acres as avoidance areas to protect resources which could increase suppression priorities. Any project within an avoidance area would have required special stipulations to mitigate resource impacts and could increase suppression priorities.

Effects under Alternative C

Alternative C allows for the designation of 869,645 acres as avoidance areas which could increase suppression costs more than Alternative B. The designation of 1,279,481 acres as exclusion zones restricting ROW development would reduce the potential for human caused fires, but could increase suppression priorities providing resource protection.

Effects under Alternative D

Alternative D allows for the management of 1,773,199 acres of avoidance areas. This alternative would provide more protection than Alternatives B and C. The management of 1,199,539 acres of exclusion zones provides less resource protection than Alternative C.

Wildland Fire Management: Effects from Transportation and Access Management

Effects Common to All Alternatives

Maintaining roads necessary for fire suppression would ensure adequate access and reasonable emergency response times.

Effects under Alternative A

Transportation and access management affects wildland fire in three main ways: 1) by providing access for fire suppression, 2) by providing an avenue for noxious weed and invasive plant spread, and 3) by providing access for increased human activities, which can lead to human-caused fires. Roads and trails that are maintained, repaired, or open for public use generally remain in a passable condition that allows access for fire suppression equipment and manpower. This improved access results in faster response times leading to reduced fire size.

Roads and trails are one of the main vectors of weed spread, which leads to increased FRCC and ecosystems moving away from natural fire regimes. This is compounded by open OHV management areas, which spreads invaders into the surrounding areas. Additional open OHV use and increased human use increase the potential for human-caused fire ignition. Alternative A includes 6,789,612 acres of open, 423,786 acres of limited, and 17,698 acres of closed OHV designations. Alternative A has the most acres designated as open for OHV and therefore has the greatest potential risk for human-caused fire and weed spread.

Effects under Alternative B

Effects from transportation and access management generally would be similar to those described for Alternative A, but there are several important differences. Alternative B has fewer acres open to OHV use (1,460,200 acres) than Alternative A, so fewer acres would be at risk for adverse weed spread and human-caused fire effects. Alternative B would decommission only those roads that are damaging the environment if alternative access is available. This action would provide a higher level of road access for fire suppression than any of the other alternatives and would provide more opportunities for weed spread and human-caused fires.

Effects under Alternative C

Effects would be similar to those under Alternative A; except that Alternative C has no areas designated as open and therefore would have the least potential for human-caused fires due to off-road activities.

Effects under Alternative D

Effects would be similar to those under Alternative A, except that acres open to OHV are 288,105. Compared to Alternatives A and B, there would be less potential for human-caused fires. There would be more potential than Alternative C.

Wildland Fire Management: Effects from Lands and Realty Management

Effects Common to All Alternatives

Ownership adjustments that improve manageability and ensure public access would increase fire management efficiency. Disposal of public lands to private ownership could create more wildland urban interface areas, adding to fire suppression and fuel treatment priorities.

Acquisitions of environmentally, culturally and historically sensitive lands, conservation easements and public access could increase fire suppressions costs and fuel treatment priorities.

Providing public access and ROW development (pipeline, roads, distribution and transmission lines, fiber optic lines, communication sites, etc.) increases the potential for human caused fires and the spread of noxious weeds and invasive plants.

Energy corridor designations would decrease the proliferation of utility ROWs and could reduce habitat fragmentation. Project specific ROWs would be analyzed on a case by case basis.

Impacts from all lands and realty actions would be subject to further review. However, BMPs, SOPs, IOPs and special mitigation measures would be implemented to minimize impacts.

Effects under Alternative A

Land tenure adjustments changing public lands into private lands would expand WUI areas, and increase fire suppression and fuel treatment demands.

Effects under Alternative B

Alternative B proposes 2,128,543 acres of public land available for disposal. An incremental increase in WUI areas would occur over time. Demand for fire suppression resources and fuel treatments would increase.

No exclusion zones are designated under Alternative B allowing for the greatest amount of ROW development. The designation of 716,528 acres as avoidance areas would allow for some protection of priority wildlife habitats.

Effects under Alternative C

Alternative C proposes 1,215,963 acres of public lands available for disposal, less than Alternative A, B and D. Fire suppression demands in and around urban areas would not increase as much as the other alternatives. Exclusion zones under Alternative C, 1,279,481 acres, allows for the most protection for priority wildlife habitats, would reduce the amount of infrastructure and demands for suppression resources to protect property and fuel treatment priorities. The designation of 869,645 acres of avoidance areas would allow more protection of resources than Alternative A and B, but could allow for ROW development with the implementation of special stipulations, thus increasing the need for fire suppression resources to protect property.

Alternative C designates specific utility corridors from the West Wide Energy Corridor PEIS which could limit habitat fragmentation and would assist in reducing ROW development.

Water importation and exportation projects could increase the need for infrastructure protection, increasing fire suppression priorities. Construction activities could increase fuel treatments for the spread of invasive plants and noxious weeds. However, BMPs, SOPs, and special mitigation measures would be implemented to minimize impacts.

Transferring the lands identified to BIA or Fort McDermitt Paiute and Shoshone Tribe would remove lands from BLM management. BLM would continue to assist in fire suppression activities.

Effects under Alternative D

Public lands available for disposal under Alternative D, 1,350,263 acres, would be less than under Alternatives A and B. Fire suppression demands around WUI areas would increase more over time but would be less than Alternatives A and B.

The identification of 1,350,263 acres available for disposal would be less than under Alternatives A and B and more than Alternative C. Fire suppression demands in and around urban areas would increase over time but would be less than Alternatives A and B and could increase the need for fuels treatments.

The management of 1,199,539 acres as exclusion zones would allow for more protection of priority wildlife habitat from ROW development than Alternatives A and B and less than Alternative C. The management of 1,773,199 acres of avoidance areas would allow for more resource protection than Alternatives A, B, and C, but could allow ROW development with the requirement of special stipulations thus increasing the need for fire suppression priorities of infrastructure.

Transferring the lands identified to BIA or Fort McDermitt Paiute and Shoshone Tribe would remove public lands from BLM management. BLM would continue to assist in fire suppression activities.

Alternative D would designate more utility corridors than Alternative C, which could limit habitat fragmentation and would further reduce individual ROW development.

Water importation and exportation projects could increase the need for fire suppression priorities of infrastructure. Construction activities could increase fuel treatments for the spread of invasive plants and noxious weeds. However, BMPs, SOPs, and special mitigation measures would be implemented to minimize impacts.

Wildland Fire Management: Effects from ACEC/RNA Management

Effects Common to All Alternatives

All ACECs would be prioritized for fire suppression. Fuel breaks would be constructed to protect ACECs.

Effects under Alternative A

One ACEC would be prioritized for fire suppression.

Effects under Alternatives B

Effects would be the same as Alternative A.

Effects under Alternatives C

Four ACECs would become priority fire suppression areas under this alternative increasing the demand for fire resources and fuel treatments to protect ACEC values.

Effects under Alternatives D

Effects would be the same as Alternative C.

Wildland Fire Management: Effects from Backcountry Byways Management

Effects Common to All Alternatives

Management of BCBs would have little affect fire management. Strategically placed fuel treatments may be necessary to protect BCBs.

Wildland Fire Management: Effects from National Historic Trails Management

Effects Common to All Alternatives

Management of national historic trails is similar to those described in the cultural resources section. Protecting the setting of National Historic Trails may restrict the number and locations of fuel treatments.

Wildland Fire Management: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There likely would be no impacts on wildland fire management resulting from WSR management. Any restrictions to fire suppression activities would be implemented according to BMPs, SOPs, as well as the goals, objective, and actions related to other resources.

Wildland Fire Management: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

Suppression activities could be limited in WSAs based on possible restrictions on access and use of heavy equipment. Placement and size of fuel breaks may be restricted in land areas containing wilderness characteristics.

Effects under Alternative A

Wilderness and WSA management may restrict suppression tactics by limiting or restricting the use of power equipment within the wilderness or WSA. Fire may become more intense and spread beyond the wilderness or WSA, causing more acres to burn.

Effects under Alternative B

Effects would be the same as those described under visual resources management.

Effects under Alternative C

Wilderness and WSA management may restrict suppression tactics by limiting or restricting the use of power equipment within the wilderness, WSA, or the eight areas identified with wilderness

characteristics. Fire may become more intense and spread beyond the wilderness, WSA or the eight areas identified with wilderness characteristics, causing more acres to burn.

Effects under Alternative D

Effects would be the same as those described for Alternative A.

Wildland Fire Management: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Protecting infrastructure that support wildlife viewing areas would have minimal impacts on fire suppression resources. Constructing strategically placed fuel treatments would protect these areas.

Wildland Fire Management: Effects from Public Health and Safety Management

Effects Common to All Alternatives

Providing for public safety would be a top suppression priority during fires.

Wildland Fire Management: Effects from Sustainable Development Management

Effects Common to All Alternatives

Reuse of existing infrastructure would extend the time that the facilities would need fire protection and would affect the location and increase demand for strategically placed fuel breaks. Maintaining access to the facilities would also provide access for fire suppression. Disposal of public lands to private ownership could restrict access for equipment or water supplies. These impacts would be offset based on acquisition of easements as appropriate.

Wildland Fire Management: Cumulative Effects

Past and Present Actions

Past and present impacts resulting from livestock grazing has affected wildland fire management depending on the degree or intensity of livestock grazing. In areas heavily grazed, less vegetation would be available to burn. From 1982 to the present minerals, lands and realty, and renewable energy developments have impacted fire management as more areas have been developed increasing fire suppression priorities to protect buildings and infrastructure. This holds true with development and expansion of wildland urban areas. Recreation activities and OHV use have increased the potential for human caused fire.

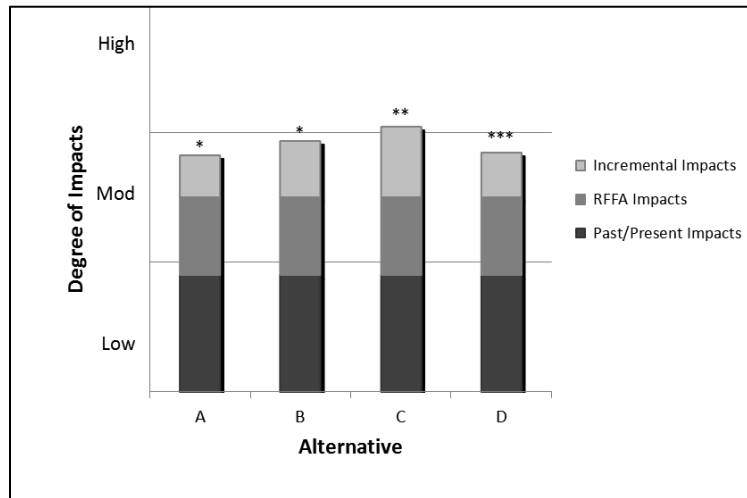
Continued large wildfires due to drought conditions and increasing fine fuels due to establishment and spread of annual invasive plants have increased demands on fire suppression operations and emergency stabilization and rehabilitation efforts. Emergency stabilization and rehabilitation efforts have limited establishment and spread of annual invasive plants (cheatgrass) in areas treated. Few impacts have occurred to fire management as a result of WHB management.

Reasonably Foreseeable Actions

Impacts would be similar to the past and present actions for livestock grazing. The no livestock grazing option would increase hazardous fuels buildup possibly making areas more prone to wildfire. Increasing operations applicable to minerals, lands and realty, and renewable energy developments would further increase suppression priorities to protect property and infrastructure. Recreation management and OHV travel management would increase the potential for human caused fires. Increased protection demands to protect designated priority wildlife habitat and watershed areas would occur as they would become priority fire suppression areas. The amount and size of priority protection varies by alternative and the number of acres designated. Fire management in these areas may also reduce fire suppression priorities to protect property as use restrictions would limit the amount of infrastructure. Large landscape scale fuels management projects would protect larger sensitive resource areas. These strategically placed fuel breaks would also improve fire suppression capabilities by slowing fire. Opportunities to manage fire for a resource benefit would also increase based on the number of acres designated in alternatives B, C, & D.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Incremental cumulative impacts would be similar for all alternatives based on compliance with Federal Wildland Fire Management Policy and dependent on climate. Overall, incremental impacts would vary between moderate and high based on climate change, the amount of public visitation, the size and the number of developments and infrastructure on public lands. Suppression priorities would increase based on the number of acres designated for priority wildlife habitat and watershed priority areas as provided in Alternatives B, C, & D (Figure 4-8).

Figure 4-8. Cumulative Impacts on Wildfires (Number and Size of Wildfires) by Alternative

Assumptions: Number of wildfires would gradually increase based on climate, conversion of vegetation to areas dominated with annual invasive plants and increased potential for human-caused fires based on population growth and increases in recreation use. Assumptions include an increase in the number of fires with acres burned similar to past fire history, and fuel treatments would be effective in limiting the size and spread of fire.

* Number of fires in 20-year history- approximately 1,810.

** Fuel treatment restrictions; no prescribed fires or herbicide use.

*** Emphasis on landscape-scale fuel treatments.

Note: Degree of impacts is qualitative in nature.

4.2.13 Cultural Resources

Summary

The cultural resources of the WD include a variety of resource types, including prehistoric and historic archaeological sites and structures, National Historic Trail segments, culturally modified trees, and places that are associated with traditional cultural and religious practices. Proposed management actions that could impact or increase the risk of impacts on known and unknown cultural resources include those that require ground disturbance, that affect natural processes, such as erosion, and that expose vulnerable cultural resources to intense fire. They also include actions that open land to potentially incompatible uses that affect the visual, atmospheric, or aural setting of some cultural resources, including traditional cultural properties, sacred sites and National Historic Trails. Management actions could also threaten cultural resources by improving access to cultural resource sites and by removing land from federal ownership.

Most of the WD has not been inventoried for cultural resources, and thousands of undiscovered or unrecorded resources are believed to be there. A Section 106 process and tribal consultation would be completed to address anticipated impacts resulting from authorized and planned activities; however, unauthorized or unplanned activities, wildland fire, dispersed recreation, natural processes and unauthorized collection, excavation, and vandalism could lead to impacts that may be more difficult to monitor and mitigate. Management actions include stipulations designed to avoid or

reduce impacts. Impacts on TCPs, sacred sites, historic trails, and some other cultural resource sites which are significant for reasons other than data potential may be difficult or impossible to mitigate.

Because planned actions would be subject to review as federal undertakings under the Section 106 process, there would be further site-specific consideration and mitigation of cultural resource impacts for many of the actions. Overall, the emphasis in Alternative C on actions that emphasize resource conservation and protection and that restrict incompatible actions would best protect significant cultural resources, followed by Alternative D. Alternative B provides the least protection for cultural resources, and Alternative A represents the status quo.

Methods of Analysis

Indicators

Indicators are used to identify the level or risk of impact. The primary indicator for assessing the condition and trend of cultural resources is the effect on cultural resources that are eligible for listing on the National Register of Historic Places, National Historic Trails or areas of importance to Native Americans or other traditional communities. Other impact indicators include the following:

- Acres and relative depth of ground-disturbing activities or removal of structural features permitted and their potential for affecting known or unknown intact cultural resources or areas of importance to Native American or other traditional communities;
- Increased access to or activity in areas where resources are present or anticipated;
- Extent that an action changes the potential for erosion or other natural process that could affect cultural resources;
- Extent that the action alters the visual, aural, or atmospheric setting of cultural resources, TCPs, and National Historic Trails; and
- Acres of land that would be removed from federal cultural resource protections or loss of federal stewardship of lands, including the National Historic Trail and trail setting.

Methods and Assumptions

Impacts on cultural resources are assessed by applying the “criteria of adverse effect,” as defined in 36 CFR 800.5a: “An adverse effect is found when an action may alter the characteristics of a historic property that qualify it for inclusion in the National Register of Historic Places in a manner that would diminish the integrity of the property’s location, design, setting, workmanship, feeling, or association. Adverse effects may include reasonably foreseeable effects caused by the action that may occur later in time, be farther removed in distance, or be cumulative.” The criteria of adverse effect provide a general framework for identifying and determining the context and intensity of potential impacts on other categories of cultural resources as well, if these are present. An assessment of effects involving Native American or other traditional community, cultural, or religious practices or resources also requires focused consultation with the affected group.

In this analysis, the criteria of adverse effect are applied on a broad scale to all known or anticipated cultural resources or cultural resource types. Analysis is based on knowledge of the resource base of the project area and the level of impacts (or risk of impacts) on cultural resources associated with the

plan objective or management action. In most instances, effects are assessed qualitatively using the best professional judgment of the preparers and BLM cultural resource specialists.

Many of the actions proposed would be federal undertakings subject to further site- and project-specific Section 106 review, effects analyses, and mitigation development designed to minimize any adverse effects. This analysis focuses on defining those impacts which may result from actions or planning direction that may not be mitigated through further Section 106 review or other review and on those management measures that would reduce or increase the risk of impacts on cultural resources.

The following assumptions regarding the resource base and management practices were considered in the analysis:

- Most of the WD has not been inventoried for cultural resources, but over 6,000 archaeological sites alone have been documented. There is potential for many more cultural resources in uninventoried areas, but the presence and significance of resources cannot be confirmed or quantified;
- TCPs are places associated with the cultural practices or beliefs of a living community. These cultural resource sites are rooted in the community's history and are important in maintaining cultural identity. Contemporary Native American groups maintain social and cultural ties to the land and resources of the WD. These cultural resources are generally not known or discussed outside of those communities, but they are present in the WD. There may be places within the WD that are important to other contemporary communities, such as those associated with ranching or sheepherding traditions and lifeways. Maintaining access to and reducing impacts on these places is a responsibility of the BLM;
- The BLM has prepared a quantitative sensitivity model for prehistoric cultural resources on private and public lands in the WD. The model estimates the densities and types of prehistoric cultural resources on lands that have not yet been inventoried. The model has not yet been field tested and is incomplete, but it is used where appropriate to analyze and compare alternatives. The model cannot predict the location of sites and is not a substitute for an archaeological survey. This model also includes an appendix on historic transportation routes that was used to assess historic-period resources;
- For prehistoric sites overall, predicted densities range from 2.2 sites per square kilometer (5.8 per square mile) in the low sensitivity rank, to 34.2 sites per square kilometer (88.7 sites per square mile) in the very high rank. Of the lands modeled, 40.9 percent were considered of moderate sensitivity rank (3.0 sites per square kilometer, 5.8 per square mile). High sensitivity was predicted for 28.5 percent of the lands (7.6 sites per square kilometer, 19.6 per square mile). Low sensitivity was predicted for 27.9 percent of the lands, and 2.5 percent were assigned the very high sensitivity rank;
- In the absence of inventory information, the number of acres affected and the intensity of the proposed activity is assumed to broadly correlate to the potential number of cultural resource sites that may be affected and the potential severity of the impacts. There is also qualitative information that indicates areas where there is a higher probability that cultural resources would be present, relative to the whole WD. For example, highly disturbed or recently developed areas are less likely to include intact cultural resources;

- The importance of a cultural property often depends on the physical, chemical, functional and aesthetic characteristics of the property. Natural weathering, decay, vandalism and construction can remove elements that originally were part of a cultural property. This loss affects the completeness and accuracy of the information used by scientists and recreation interpreters and influences the importance of the property for traditional uses;
- Activities such as human visitation, recreation, vehicle use, grazing, and fire and nonfire vegetation treatments increase the rate of deterioration through natural processes. While the effect of a few incidents may be negligible, the effect of repeated uses or visits over time could increase the intensity of impacts due to natural processes;
- Effective scientific use of a cultural property depends on the vertical and horizontal relationships among the elements of the property and the context of the property itself. Even partial displacement of original relationships lowers the reliability, or may completely negate the significance, of such relationships in reconstructing the activities and sequence of events that occurred at the site;
- Intrusions to or alterations of a cultural property or its setting may affect the integrity of the property. Structural additions, graffiti, and surrounding audio or visual intrusions may be inconsistent with the original cultural resource values and may affect the scientific or aesthetic importance of the property. Traditional uses of cultural properties can be impacted by modern intrusions that are out of character with the values (e.g., sacred or ceremonial) ascribed to the resource;
- Intrusions to the visual, atmospheric, or aural setting of cultural resources, especially cultural landscapes associated with National Historic Trails, can extend a considerable distance from the location of the resource;
- Many cultural resources are situated on or just below the ground surface and are very susceptible to impacts from vehicle use, vegetation removal and treatments, animal trampling, fire, and all forms of ground disturbance;
- Vandalism or unauthorized collecting or excavation can destroy a cultural resource in a single incident. Exposure of cultural resources, dissemination of resource locations, and access to areas where cultural resources are present can increase the risk of vandalism or unauthorized collection of materials;
- Population growth, urban encroachment, sprawl, and development on adjacent lands would increase the risk of impacts on BLM-managed cultural resources through recreation, visitation, vandalism, and changes in setting;
- Measures that withdraw land or restrict access or surface development to protect natural or cultural resources can provide direct and indirect protection of TCPs, National Historic Trails, and other cultural resources from disturbance, incompatible activities, and unauthorized activities;
- Federal and BLM requirements of consultation, a site-specific inventory, and an evaluation and impact analysis through the Section 106 process provide a systematic means of addressing direct impacts on cultural resources from authorized undertakings, projects, and actions. Nearly all implementation actions would be subject to further cultural resource review, and the Section 106 process would be completed before site-specific projects are

authorized. If adverse effects were found, mitigation measures, including avoidance, would be implemented to minimize the effects. Formal agreement documents may be used in completing the Section 106 process for broad implementation actions;

- Cultural resources are nonrenewable. While impacts on many cultural resources are mitigable through data recovery and other means, impacts on TCPs, National Historic Trails, and some other cultural resource types, such as Lovelock Cave, are difficult or impossible to mitigate unless the sites and associated settings are avoided. Opportunities for further research and interpretation of archaeological sites can be lost when impacts are mitigated through data recovery;
- Site monitoring, research, inventories not related to projects, site stabilization, public interpretation, and other proactive management activities would continue; and
- As additional inventories are completed in the WD, more cultural resource sites in the planning area would be identified and evaluated. Knowledge of these resources would aid in their protection from inadvertent impacts, would add to the understanding of cultural resources both in surveyed and unsurveyed areas, and could increase the BLM's workload in site protection, monitoring, and data recovery.

Watchable wildlife viewing sites are not addressed because management actions are not expected to affect cultural resources.

Cultural Resources: Effects from Air Quality Management

Effects Common to All Alternatives

There are few likely impacts on cultural resources resulting from air quality objectives or actions under any of the alternatives. Airborne particulates and emissions can impact the visual and atmospheric setting of cultural resources, including National Historic Trails and TCPs in areas where these resources are present. All of the alternatives include general provisions to reduce and control airborne particulates and emissions. Effects of all of the alternatives on cultural resources would be similar.

Cultural Resources: Effects from Geology Management

Effects Common to All Alternatives

Many of the identified unique geological and other features are Native American areas of concern, archaeologically sensitive areas (for example, the Lake Lahontan shoreline features) or are near National Historic Trails. There are no geology management actions that are common to all alternatives. Alternatives that protect unique geologic features would also protect the physical integrity and settings of known and potential Native American sacred sites and TCPs, as well as National Historic Trail segments and archaeologically sensitive areas. Alternatives that provide lesser degrees of protection could lead to impacts, including destruction of these resources and their settings. Mineral sales and locatable mining can destroy and otherwise impact Native American sacred sites and TCPs and the settings of National Historic Trails. Although most impacts on archaeologically sensitive areas would be addressed through the Section 106 process, sites that are NRHP eligible for reasons other than data potential could be impacted by mining. Unrestricted OHV use increases the likelihood of impacts on the physical integrity and setting of archaeological

sites, sacred sites, and TCPs; limiting OHV use to existing roads reduces the likelihood of this occurring. While some of the proposed features are along well traveled roads, encouraging visitation to features in more remote areas where there are sensitive cultural resources could lead to increased impacts from ground disturbance, alterations to setting, and unauthorized collection and vandalism. Public education efforts could help mitigate some of these impacts.

Effects under Alternative A

Continuing to permit mineral sales and locatable mining in the vicinity of unique geologic resources could destroy or otherwise impact the physical integrity and setting of Native American sacred sites and TCPs, the setting of National Historic Trails, and the setting and physical integrity of some archaeological sites. Unrestricted OHV use could also lead to impacts on the physical integrity and setting of cultural resources and unauthorized collection and vandalism.

Effects under Alternative B

Mineral sales and locatable mining could destroy or otherwise impact the physical integrity and setting of Native American sacred sites and TCPs, the setting of National Historic Trails, and the setting and physical integrity of some archaeological sites. Limiting OHV use to existing roads and trails would reduce the likelihood of impacts on physical integrity and setting of archaeological sites, sacred sites, and TCPs off the roads from current conditions. Encouraging visitation may increase some potential impacts in some areas from physical damage, alterations to setting, and unauthorized collection and vandalism.

Effects under Alternative C

Managing areas of unique geologic interest as exclusion zones for ROW and other discretionary actions, withdrawal from the General Mining Law, closure to saleable mineral disposal and, restricting all OHV use would reduce the likelihood of impacts on physical integrity and setting of associated archaeological sites, sacred sites, and TCPs from ground disturbance, alterations to setting, and unauthorized collection or vandalism. Alternative C would be the most protective of cultural resources associated with these geologic features.

Effects under Alternative D

Applying site specific mitigation measures to protect unique geologic resources would have few, if any, impacts on cultural resources.

Cultural Resources: Effects from Soil Resources Management

Effects Common to All Alternatives

Because many cultural resource sites are situated on or just below the ground surface, they are susceptible to damage and destruction from ground disturbance and erosion. Damage can include modification of site spatial relationships and displacement and damage of artifacts, features, and midden deposits. This can result in the loss of information relevant to the site function, dates of use, plants and animals used, past environments, and other important research questions. Measures under all of the alternatives limiting soil erosion and managing ground-disturbing activities would

indirectly help protect these cultural resources. Reclamation measures may also preserve or restore the setting of cultural resources.

Effects under Alternative A

In general, indirect protection of cultural resources from soil erosion, compaction, and ground-disturbing activities or reclamation requirement would be less under Alternative A because current management requires fewer specific actions than do the other alternatives.

Effects under Alternative B

Fewer mitigations for reducing the loss of biological soil crust are required, so Alternative B would be less protective of archaeological sites against increased erosion in affected areas. The components of soil surface, vegetation, soil litter, and biologic crusts would be maintained or improved, rather than just encouraged, as under Alternative A. This would increase protection against erosion and soil-disturbing activities, and would reduce the risk of impacts on cultural resources, especially archaeological sites. Reclamation requirements may also restore the setting of cultural resources.

Effects under Alternative C

Alternative C provides the highest level of required stipulations and mitigations for soil-disturbing activities, reclamation, and erosion control, which could indirectly reduce the risk of impacts on cultural resources from erosion and ground disturbance impacts or could require reclamation, which may restore the setting of cultural resources.

Effects under Alternative D

Indirect protection of cultural resources would be similar to that defined for Alternative C. Stipulations and mitigations for soil-disturbing activities, reclamation, and erosion control would be fewer than under Alternative C and would allow the BLM more discretion in applying them.

Cultural Resources: Effects from Water Resources Management

Effects Common to All Alternatives

Water is considered sacred to the tribes that use the WD. Some water sources and features have been identified as TCPs, and others would likely be considered TCPs if they were evaluated. Actions under all alternatives that protect and maintain water features, water quality, stream flows, water temperature, fisheries, and natural resources associated with water features would help preserve these tribal values and traditional resources. Actions to develop wells, acquire water sources, and modify springs include risks of disturbance of cultural resources and traditional uses and values through ground-disturbing activities, changes in access, visibility, and setting of water features and changes to the water features themselves.

Effects under Alternative A

Current management specifies fewer actions than the other alternatives that would indirectly protect tribal values associated with water features, water quality, stream flows, water temperature, fisheries, and other natural resources that depend on water features.

Effects under Alternative B

Additional measures to manage priority watersheds and protect well heads would provide more protection for water features and preserve the opportunity to pursue tribal uses. Commercial development of water sources could lead to additional risk of impacts on cultural resources and traditional uses and values through ground-disturbing activities, changes to the water features themselves, changes in access, visibility and setting of water features.

Effects under Alternative C

Managing priority watersheds and well head protection as exclusion zones would provide additional protections for water features and preserve the opportunity to pursue tribal uses. Water import or export projects would be permitted only if they were not to exceed the perennial yield of the source basin and could be implemented without compromising the multiple use mandate of FLPMA. This would reduce the risk of impacts on cultural resources and traditional uses and values through ground-disturbing activities, changes in access, visibility and setting of water features, and changes to the water features themselves. If culturally significant water features or tribal values were present, any impacts would be difficult to mitigate, but the BLM would seek to mitigate any adverse effects on acceptable levels, in consultation with affected groups. Alternative C reduces the risk of impacts on cultural resource impacts more than the other alternatives.

Effects under Alternative D

Priority watershed management use restrictions and permitting water importation or exportation projects only if impacts could be mitigated to acceptable levels would protect water features and would preserve the opportunity to pursue tribal uses. The risk of impacts would be similar to but more than those proposed under Alternative C.

Cultural Resources: Effects from Vegetation—Forest and Woodland Products Management

Effects Common to All Alternatives

Actions under all alternatives to monitor forest health and SOPs (Appendix B) to reduce impacts on woodland habitats would help protect forests and forest resources such as pine nut gathering areas that are culturally important to tribes and preserve culturally modified trees. Maintaining opportunities for tribal groups to harvest pinyon trees and exercise this practice at recognized traditionally used sites is included in all alternatives. Because the Stillwater Pinyon Forest is threatened by mistletoe and other infestations, treatments to maintain and enhance the health of the forest would help to preserve TCPs and areas of concern to tribes, if treatments were undertaken in consultation with the tribes. Forest vegetation treatment methods can impact cultural resources from removal, ground disturbance, erosion, fire, changes in setting, increased access, visibility and activity in the vicinity of cultural resources, and temporary loss of access and setting of any TCPs present. Prescribed burns and unsuppressed wildfires could devastate areas of Native American concern if control of these fires is lost. With current climatic conditions, these forests may not come back. Controlled prescribed fire could help improve the health of the forest but residual unanticipated impacts on cultural resources could occur where these resources are undiscovered or have not been inventoried.

Effects under Alternative A

Effects would be similar to those described as common to all alternatives. Wildland fire would be suppressed, reducing the potential for impacts on cultural resources from wildland fire. Alternative A specifies additional protections for pinyon and juniper stands that are culturally important to Native Americans.

Effects under Alternative B

Changes in management of pinyon and juniper stands that are culturally important to Native Americans would impact traditional uses and TCPs. Removing current restrictions on Christmas tree cutting, green pinyon cutting and firewood cutting activities would damage trees and groves that have been traditionally used for pine nut gathering for generations, impacting the viability and continuity of these cultural traditions. Commercial harvests of pine nuts would compete with the supply available for traditional uses and users and may impact TCPs and their setting and expression of cultural practices. Expanding the use of wildland fire can result in direct disturbance to or loss of cultural resources through the destruction or modification of structures, features, artifacts, cultural use areas, pinyon stands and culturally modified trees. Fire can also lead to other indirect impacts, such as damage from erosion and unauthorized collection and vandalism. Treatments to control mistletoe and other infestations in the Stillwater Pinyon Forest would help to preserve TCPs and other areas of tribal concern, if undertaken in consultation with the tribes. While controlled prescribed fire could help improve the health of the forest, if control of prescribed or wildland fire is lost, areas of Native American concern could be devastated. With current climatic conditions, these forests may not come back. Some effects of wildland fire on cultural resources could be avoided if cultural resource considerations are incorporated into fire management planning objectives, priorities and actions.

Effects under Alternative C

Retaining and expanding restrictions on harvest of pinyon stands, Christmas tree cutting, firewood cutting, and green pinyon cutting would protect traditional cultural practices related to tribal use areas. Allowing natural fire regimes to return in lieu of prescribed fire would expand the potential for impacts on cultural resources because prescribed fire can reduce the frequency and intensity of wildland fire by reducing fuel loads. Fires would be suppressed to the extent possible which would reduce the potential for impacts on cultural resources from wildland fire. Suppression, however, can include ground-disturbing activities that can directly impact cultural resources by altering spatial relationships. Some effects of wildland fire and suppression on cultural resources would be avoided through cultural resource considerations incorporated into fire management planning objectives, priorities and actions. Fire could devastate areas of Native American concern if control of these fires is lost. With current climatic conditions, these forests may not come back. The potential beneficial effects on cultural resources from treatment projects may be less than other alternatives because there would be no active treatments on 27,605 acres of old growth forest and treatments would be limited to mechanical and biological methods when practical and feasible. Avoiding chemical treatments may prevent adverse effects on the health of tribal users who may have cultural uses for the targeted plant species.

Effects under Alternative D

Allowing the BLM more discretion in actively managing pinyon stands may lead to fewer impacts on cultural resources from wildland fire than under Alternative C but potentially more direct impacts from the harvest of forest products. Impacts from prescribed fire and allowing conditional fire suppression management for a benefit would be the same as under Alternative B. Careful use of treatments, protection of green pinyon, and selective harvest in consultation with tribal groups would help maintain the health of culturally important pinyon stands and the long-term pursuit of traditional practices.

Cultural Resources: Effects from Vegetation—Invasive and Noxious Species Management

Effects Common to All Alternatives

In the long term, treating weeds would indirectly reduce the risk on cultural resources from wildland fire and suppression, would reduce erosion of archaeological sites, would restore native species important to tribal users, and would help restore the setting of cultural landscapes and TCPs. Chemical treatments may affect or target other culturally important resources or have negative health effects on tribal users. Treatments may result in changes to setting and temporary loss of access or availability of certain areas for cultural practices during treatment.

Effects under Alternative A

Because current management specifies fewer actions than the other alternatives to prevent or treat for weeds and specifies no measures targeting invasive weeds, the potential positive effects on cultural resources from reduced risk of wildland fire and suppression, erosion reduction, native species, and setting restoration would be reduced. Potential impacts from treatments would be less than under the other alternatives.

Effects under Alternative B

Additional actions and cooperative efforts to control, prevent, and treat lands for both invasive and noxious weeds, including physical, mechanical, biological, and chemical controls, would be more effective at controlling weeds and reducing the risk of impacts on cultural resources from wildland fire and suppression and erosion and in restoring native species and settings than under Alternative A. Expanding treatments may affect plant resources used by Native Americans, increase health risks, and interfere with the use of certain areas for cultural practices during treatment. Inadvertent damage of uninventoried cultural resources could occur if control of prescribed fire is lost.

Effects under Alternative C

Similar to Alternatives B and D, Alternative C would expand treatment from current levels; however impacts associated with the use of prescribed fire and chemical treatments would not occur. There would be fewer potential impacts on cultural resources and uses than under the other alternatives, but the effectiveness of weed reduction and associated potential positive effects on cultural resources from reduced risk of wildland fire and suppression, erosion reduction, native species, and setting restoration would be less than under Alternatives B and D.

Effects under Alternative D

Effects would be the same as those identified for Alternative B.

Cultural Resources: Effects from Chemical and Biological Control

Effects Common to All Alternatives

Using chemical and biological pest control methods may reduce the loss of culturally modified trees, help maintain the health of culturally important pinyon stands and therefore help maintain the long-term pursuit of traditional practices associated with pine nut gathering. Treatments may affect or target other culturally important natural resources or have negative health effects on tribal resource users, so coordination with tribal groups is essential to avoid impacts.

Effects under Alternative A

Effects would be similar to those identified for all alternatives.

Effects under Alternative B

Effects would be the same as those identified for all alternatives, but Alternatives B, C, and D may lead to increased use and impact potential, as described above.

Effects under Alternative C

Effects would be similar to those described for all alternatives, but Alternatives B, C, and D may lead to increased use and impact potential, as described above. Because chemicals would not be used there would be no potential for health impacts on traditional users or loss of other culturally important resources.

Effects under Alternative D

Effects would be the same as those identified for Alternative B.

Cultural Resources: Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Maintaining and restoring vegetation cover on rangelands would help protect cultural resource sites that are situated on or just below the ground surface and are susceptible to damage and destruction from ground disturbance, erosion, and increased wildland fire. Measures to rest land, restrict grazing, fence sensitive areas, and disperse impacts from riparian areas would also protect cultural sites from ground disturbance. Restoring desired native species may include plants used or valued by tribal users and help retain historic settings. Encouraging fire rehabilitation use or restoring nonnative plants can increase the potential for impacts on historic settings and native gathering areas. Controlling woodland encroachment onto rangelands could impact pinyon and juniper stands and pine nuts that are culturally important. Residual unanticipated impacts on cultural resources could occur from treatments and there could be short-term impacts on TCPs from changes in setting and loss of access during treatment.

Effects under Alternative A

Effects of current management would be similar to those described as common to all alternatives. By specifying fewer biological, chemical, and prescribed fire treatments than the other alternatives, the potential direct impacts from treatments are less than under the other alternatives. Because fewer actions enhancing vegetation communities and rehabilitating habitat after a fire would be specified, anticipated benefits to cultural resources from erosion reduction, risk of wildland fire, restored plants, and settings would not be as likely to occur.

Effects under Alternative B

By expanding the scope of active rangeland treatments and targeting 70,000 acres of rangeland improvements, a reduction in impacts on surface cultural resource sites from loss of vegetated cover and wildland fire would be anticipated. By emphasizing the use of nonnative species for rehabilitation and reclamation, there would be an increase in the potential for impacts on historic settings and native gathering areas. Efforts to enhance sagebrush vegetation and sage-grouse habitat would improve these resources valued by Native Americans, but not as much as would Alternatives C and D.

Effects under Alternative C

Promoting native plant communities through the use of native seed, longer rest periods for plant establishment and recovery from livestock, and natural recovery would improve the setting of cultural resources and restore plants that may be important to tribal users. Treatments would improve the preservation of surface cultural resource sites from loss of vegetated cover and wildland fire, but restoration may be less effective and take more time. Measures under Alternative C for enhancing sagebrush vegetation and sage-grouse habitat would improve these resources valued by Native Americans more than would the other alternatives. Alternative C would also target 70,000 acres of rangeland for improvement from FRCC III to FRCC II.

Alternative C, Option 1

Ground disturbance, trampling and erosion, and other ongoing impacts on cultural resources associated with grazing would continue, but at a reduced rate.

Alternative C, Option 2

Restricting livestock grazing would eliminate impacts on cultural resources from this activity.

Effects under Alternative D

Impacts on surface cultural resource sites from loss of vegetated cover and wildland fire would be reduced by expanding the scope of active rangeland treatments and by improving FRCC from Class III to Class II. By emphasizing the use of native species for rehabilitation and reclamation, there would be less potential for impacts on historic settings and native gathering areas. Efforts under Alternative D to enhance sagebrush vegetation and sage-grouse habitat would improve these resources valued by Native Americans more than would Alternatives A and B.

Cultural Resources: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Improving or restoring riparian and wetland areas may affect the cultural resources and cultural uses that are often associated with these areas. Restrictive buffers around streams and water bodies and closures to prevent actions that would degrade riparian conditions would indirectly protect cultural resources within these areas. Restoration would enhance archaeological site preservation and the setting of TCPs. Culturally modified trees and natural resources and water features important to contemporary Native Americans would be protected and enhanced. Measures to control woodland encroachment onto riparian and wetland zones could impact pinyon and juniper stands that are culturally important to contemporary Native Americans.

Effects under Alternative A

By specifying fewer actions, goals, and treatments for maintaining or improving wetlands and riparian areas than the other alternatives, the potential direct impacts on cultural resources from treatments are less than under the other alternatives. Reductions in erosion, enhanced site preservation, and the protection of any culturally important natural resources and water features would also be less.

Effects under Alternative B

Setting additional goals and BMPs for improving riparian and wetland areas and addressing non-grazing impacts on riparian and wetland areas would provide more long-term indirect protection to cultural resources by reducing the potential for erosion of archaeological sites and enhancing natural resources that may be culturally significant.

Effects under Alternative C

By emphasizing the use of natural processes, Alternative C has the least potential for impacting cultural resources through treatments, construction of structures, alternative water developments, exclusion fencing, vegetation manipulation, and changes to setting. By specifying the highest goals for improving riparian areas, the preservation and protection of cultural resources from erosion and other ground disturbance would be improved more than the other alternatives in the long-term. Restoring native plants and natural resources important to tribal groups would help maintain cultural practices and traditions and the setting of TCPs.

Alternative C, Option 1

Ground disturbance, trampling and erosion, and other ongoing impacts on cultural resources associated with grazing would continue, but at a reduced rate.

Alternative C, Option 2

Restricting livestock grazing would eliminate impacts on cultural resources from this activity.

Effects under Alternative D

Effects would be similar to those identified for Alternative C, Option 1, except that there would be fewer expected long-term improvements to the protection and preservation of sites and culturally significant species from riparian restoration.

Cultural Resources: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

Improvements to land health and aquatic habitat and restrictions on access and stream bank alterations could increase soil stability, provide vegetative cover, and reduce ground disturbance, thereby improving protection of surface cultural resources. Maintaining and improving habitat for waterfowl, fish, and other wildlife could preserve opportunities to maintain traditional uses associated with native wildlife. Actions to enhance sagebrush vegetation and sage-grouse habitat would improve these resources valued by Native Americans but may reduce available pinyon acreage. Actions to maintain spring resources could help protect water features that are culturally important to tribes but could include risks of direct disturbance or alteration of the setting of cultural resources through ground-disturbing activities, construction, fencing, increased access, visibility and activity.

Effects under Alternative A

Effects would be similar to those described as common to all alternatives. Current restrictions and protections for habitat and species that indirectly protect cultural resources or enhance species that are important to Native Americans would continue, but there would be fewer specific measures and objectives than the other alternatives.

Effects under Alternative B

By designating Priority 2 wildlife habitats for sagebrush and sage-grouse, these areas would be managed as avoidance areas for certain activities and construction, indirect risks of impacts on cultural resources would be reduced in those areas. Efforts to enhance sagebrush vegetation and sage-grouse habitat would improve these resources valued by Native Americans, but not as much as would Alternative C and D. Similar to Alternative D, new percentage limits on stream bank alterations would protect cultural resources in these areas from direct surface disturbance.

Effects under Alternative C

Use restrictions applied to Priority 1 and Priority 2 wildlife habitat areas would provide indirect protections of cultural resources, TCPs, and National Historic Trails from direct disturbance, the effects of erosion, and alterations to setting. Alternative C would provide the highest amount of habitat preservation for sage-grouse and would improve these resources valued by Native Americans. Fencing and OHV closure at Gridley and Continental Lakes would reduce ground disturbance and potential for damage to the cultural resources present. Removal of artificial water developments may lead to the loss or migration of culturally important species. Alternative C would provide the most limits on stream bank alterations, which would protect cultural resources in these areas from direct ground disturbance and effects on setting.

Effects under Alternative D

Effects of Alternative D would be similar to those described for Alternative B. Use restrictions applied to Priority wildlife habitat areas would provide additional indirect protection from ground disturbance and alteration to settings than under Alternatives A and B but less than under Alternative C. Alternative D would be less effective at protecting sagebrush and sage-grouse valued by Native Americans than would Alternative C. Similar to Alternative B, new percentage limits on stream bank alterations would protect cultural resources in these areas, but to a lesser extent than under Alternative C.

Cultural Resources: Effects from Special Status Species Management

Effects Common to All Alternatives

Measures to protect special status fish, wildlife, and wildlife habitat include a variety of restrictions, buffers, closures, height limits, and bat gates that would limit activities that are incompatible with maintaining special status species. These actions could indirectly reduce the potential for disturbance of cultural resources, vandalism, and unauthorized collecting. These measures would reduce visual interference and noise, thus preserving the setting of the cultural resources. Some actions, such as the installation of bat gates, would affect visual setting and access to caves. Culturally important species would be protected and enhanced, but there may also be loss of access to TCPs.

Effects under Alternative A

Effects would be similar to those identified for all alternatives.

Effects under Alternative B

Permitting prescriptive grazing within wet meadows and riparian areas may lead to additional impacts on cultural resources because cultural resources, TCPs, and culturally important plants are often associated with riparian areas. Potential impacts include trampling, soil disturbance, erosion, displacement of artifacts and site contents, and loss of culturally significant plants. Prohibiting high profile structures near sage-grouse leks may help preserve the setting of National Historic Trail resources and TCPs.

Effects under Alternative C

Effects would be similar to those identified for all alternatives. The potential for effects on cultural resources are the least under Alternative C because measures to protect special status species and their habitats would restrict or prohibit activities in more areas than the other alternatives. Prescriptive grazing would not be permitted within wet meadows and riparian areas, which could protect cultural resources from ground disturbance, trampling and erosion, and other ongoing impacts on cultural resources associated with livestock grazing. Cultural resources, TCPs, and culturally important plants are often associated with riparian areas.

Effects under Alternative D

Effects would be similar to those identified for Alternative B.

Cultural Resources: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Ongoing effects of WHB on cultural resources would be similar to those for livestock grazing. Grazing and trampling reduces vegetative cover and disturbs the soil, which accelerates erosion and weathering. Cultural resources are directly impacted by the modification, displacement, and loss of artifacts, features, and middens. This results in the loss of valuable cultural resource information regarding site function, date of use, subsistence, past environments, and other research questions. Trampling and grazing can also impact TCPs, traditional use areas, and culturally important plants. Effects can be intensified when animals are concentrated near water sources where cultural resources are likely to be present. Maintaining HMAs and HAs could also impact cultural resources by concentrating impacts in defined areas while reducing impacts in other areas. Improving rangeland health could reduce the potential for impacts on cultural resources due to direct disturbance and erosion. Measures protecting WHB through restrictions on motor vehicle racing and other activities may also limit disturbance of the physical integrity and setting of cultural resources.

Effects under Alternative A

Effects would be similar to those identified for all alternatives, except that this alternative allows for construction of fences, which may be necessary to protect cultural resources and traditional use areas.

Effects under Alternative B

Effects would be the same as those identified for Alternative A.

Effects under Alternative C

Effects would be similar to those identified for all alternatives except that the construction of fences, which may be necessary to protect cultural resources and traditional use areas, would not be allowed.

Alternative C, Option 1

Ground disturbance, trampling and erosion, and other ongoing impacts on cultural resources associated with livestock grazing would continue.

Alternative C, Option 2

Ground disturbance, trampling and erosion, and other ongoing impacts on cultural resources associated with livestock grazing would cease, but similar lesser impacts from WHB would continue.

Effects under Alternative D

Effects would be the same as those identified for Alternative B.

Cultural Resources: Effects from Wildland Fire Management

Effects Common to All Alternatives

Fire can result in direct disturbance or loss of cultural resources through the destruction or modification of structures, features, artifacts, cultural use areas, and culturally modified trees. Organic materials, and the information that can be obtained from their study are especially vulnerable to heat damage, but intense fire can damage stone as well. Fire control and suppression can involve ground-disturbing activities that can also directly impact cultural resources by altering the spatial relationships of archaeological sites. Fire can also result in impacts through erosion and the increased visibility of cultural resources. Fire can remove vegetation and expose previously undiscovered resources, allowing their study and protection; however, sites exposed by fire or flagged for fire avoidance in prescribed burns can be susceptible to unauthorized collection and vandalism. There could also be impacts on cultural resources from ground disturbance associated with fuel treatments and rehabilitation, the effects of chemicals and fire, and the introduction of seeds and pollens, which could affect the accuracy of paleobotanical data on archaeological sites.

The risk of impacts on cultural resources is greatest from unplanned wildland fire since the locations of cultural resources are less likely to be known and avoided during the fire and fire suppression. Restrictions under the Wildland Fire Decision Support System (WFDSS) and minimum impact suppression tactics are designed to avoid or minimize impacts on sensitive cultural resources. Avoiding the use of retardant to protect open water sources could also protect culturally important water features. Fire breaks are planned and placed to avoid and protect known cultural resources.

Cultural resources would be considered before any planned fuel reduction and restoration of native vegetation. In the long-term, culturally important native plant and animal species would benefit from fire management tools. Areas considered for allowing conditional fire suppression management for a benefit include a large portion of the Stillwater Range, which contains a pinyon forest, and TCPs, which are valued by Native Americans, as well as other areas containing cultural sites that are vulnerable to fire. These include Basque aspen carvings, ethnographic sites, and historic structures and wood cutting areas. While fire can be used as a tool to improve the health of forests such as the Stillwater Range, under current conditions there is a high risk that control of the fire could be lost, devastating the forest for generations to come and destroying other valuable archaeological and tribal resources. Other impacts would be the same as those described in Vegetation—Rangeland Management.

Effects under Alternative A

Current management emphasizes full suppression of wildfires which reduces the potential for impacts on cultural resources from wildland fire. Suppression, however, can include ground-disturbing activities that can directly impact cultural resources by altering spatial relationships of artifacts and features. Types of effects would be the similar to those identified for all alternatives. Where there are insufficient resources for full suppression of wildfires, the BLM would prioritize suppression, perhaps resulting in impacts on cultural resources that may have otherwise been avoided.

Effects under Alternative B

Effects would be similar to those described for all alternatives, except that 110,167 acres are identified as areas where conditional fire suppression may be allowed for a benefit. Because Alternative B designates suitable fire use areas within the Stillwater Range and other areas containing cultural sites, including pinyon gathering areas, Basque aspen carvings, ethnographic sites, and historic structures and wood cutting areas, there is a high risk of the loss of cultural resources from fire. The risk of impacts on cultural resources is greatest from unplanned wildland fire because the locations of cultural resources would be less likely to be known and avoided during the fire and fire suppression. Cultural resource inventory and fire management prescriptions in fire management plans could help prevent these impacts. However, if control of the fire was lost, these impacts could still occur.

Effects under Alternative C

The effects would be the same as those identified for Alternative A, except that there would be priority fire suppression areas established and thus additional protection from wildfire for ACECs, cultural areas and TCPs, and culturally important vegetation communities.

Effects under Alternative D

Effects would be similar to those identified for all alternatives, except that 110,167 acres are identified where conditional suppression may be allowed for a benefit.

Cultural Resources: Effects from Cultural Resources Management

Effects Common to All Alternatives

Impacts on cultural resources from proposed land use authorizations would be minimized or avoided by complying with laws and executive orders designed to preserve and protect cultural resources. Complying with management measures for authorized actions requires consulting with federally recognized tribes and other interested parties, identifying and evaluating cultural resources, and adhering to procedures for resolving any adverse effects and mitigating impacts. Completion of the Section 106 process is required for all federal undertakings implementing resource management plan decisions. There is a greater risk of impacts resulting from unauthorized activities, natural processes, dispersed activities, and incremental or inadvertent human actions, especially where inventories are incomplete.

Cultural resource management measures would help identify, preserve, protect, and reduce impacts on cultural resources. Ongoing and planned management measures include the following:

- Conducting inventories, managing NRHP-eligible resources for conservation and protection;
- Avoiding adverse effects as the preferred mitigation;
- Consulting with federally recognized tribes;
- Patrolling and monitoring vulnerable cultural resource areas;
- Cooperating with groups to identify and evaluate trail segments for the NRHP;
- Protecting aspen art trees and groves;

- Maintaining National Historic Trail segments
- Partnering with academic, educational, and tribal groups for research projects;
- Working with the tribes on implementing management measures to ensure the sustainability of traditional use areas associated with pine nut gathering;
- Issuing free use permits to tribes for pine nut harvesting and dead and down firewood gathering would help tribes continue their traditional practices; and
- Thinning, prescribed fire, and other tools would be used to control disease and maintain the health of the forest, helping to preserve tribal values.

Effects under Alternative A

Allowing OHV use on most of the planning area, especially in the vicinity of the National Historic Trail resources and Lovelock Cave risks direct impact on archaeological sites and other cultural resources present. Open OHV use can impact cultural resources and trail segments through direct disturbance of site structure, artifact breakage and displacement, vandalism, soil compaction, altered surface water drainage, erosion, creation of new routes, and visual and aural intrusions to setting. OHV use can also facilitate access to any TCPs present for cultural uses, but it could also increase the risk of impacts on all cultural resources from unauthorized collection or vandalism.

Maintaining a VRM Class II objective within six miles of the CNHT centerline or to the visual horizon within the six-mile zone would continue to provide the highest objective among the alternatives for protecting the visual setting of the trail. However current roads, utilities, and other developments are inconsistent with this objective. The lack of viewshed protection for the Lovelock Cave BCB would continue, and impacts on the setting of this resource may occur. The integrity of the setting of historic trails could be impacted by fluid mineral leasing and material sales.

Effects under Alternative B

Effects of OHV use on cultural resources would be the same as those identified for Alternative A. Reducing the current objective for the CNHT trail to VRM Class III overall and VRM Class IV along I-80 and the utility corridor would allow additional intrusion on the viewshed of the historic trail, would affect the visitor experience of the setting of the trail, and could indirectly result in the loss or damage of trail resources through development in the trail corridor. Adding a VRM Class III objective to the Lovelock Cave BCB and Lovelock Cave would increase protection from current levels but would still allow moderate change that could reduce the future integrity of the visual setting. The integrity of the setting of historic trails could be impacted by fluid mineral leasing and material sales.

Changes in management of pinyon and juniper stands that are culturally important to Native Americans would impact traditional uses and TCPs. Removing current restrictions on Christmas tree cutting, green pinyon cutting, and firewood cutting would damage trees and groves that have been traditionally used for pine nut gathering for generations, impacting the viability and continuity of these cultural traditions. Commercial harvests of pine nuts would compete with the supply available for traditional uses and users and may interfere with the setting of TCPs and expression of cultural practices.

Implementing additional proactive cultural resource management measures, such as public interpretation, inventory priorities, sensitivity modeling, and categorizing known resources into use categories for planning purposes, would help the BLM identify, protect, and educate the public about significant cultural resource resources.

Effects under Alternative C

Limiting OHV use to existing roads and trails in the vicinity of the Lovelock Cave BCB, the CNHT trail viewsheds, and other sensitive areas and closing OHV use to Class I segments of National Historic Trails would provide additional protection from surface disturbance, vandalism, and intrusions to the setting of cultural resources. Retaining the current VRM Class II objective for the CNHT, adding a VRM Class II objective to the Lovelock Cave BCB, and removing sensitive trail viewsheds from consideration for disposal would provide the highest objectives among the alternatives for protecting the visual setting of the trail. New restrictions on fluid and solid mineral surface occupancy and mineral material sales within one mile of the CNHT and historic trails would avoid potential effects from surface disturbance of trail resources and additional alterations to setting in those areas.

Continuing current restrictions on harvest of green pinyon and commercial and noncommercial harvests of woodland products and Christmas trees in the Stillwater Range would protect tribal uses of these resources and would help ensure the continuity of these practices. Expanding the proactive cultural resource management measures and interpretative programs would increase appreciation of the history and cultural resources present and enhance opportunities for public use and protection.

Effects under Alternative D

Effects would be similar to those identified for Alternative C. Historic landscapes along CNHT would be managed to VRM Class II, Class III, and Class IV objectives, based on an assessment of the actual scenic values present. While a reduction from current objectives, this action would allow the BLM to assess impacts on the visual setting of trail resources based on the existing character of the landscape.

Cultural Resources: Effects from Tribal Consultation

Effects Common to All Alternatives

Consultation with tribal groups on project effects and land use planning is a complementary and required part of cultural resource management. Efforts to document, recognize, and include confidential tribal knowledge and concerns in the identification and management of cultural resources, especially traditional use areas and TCPs, enhance the management of these cultural resources. Impacts on TCPs and sacred sites can be very difficult and, in some cases, impossible to adequately mitigate to the satisfaction of all parties. The potential for impacts on cultural resources would be reduced by actions to protect traditional religious practices and sites, land forms, burial sites, resources, and other areas of concern by designating SMAs or emergency, temporal, or seasonal closures.

Effects under Alternative A

Effects would be similar to those identified for all alternatives.

Effects under Alternative B

Effects would be similar to those identified for all alternatives.

Effects under Alternative C

Effects would be similar to those identified for all alternatives. Alternatives C and D also propose periodic meetings as an effective and proactive approach to engage the tribes in planning future land use actions and avoiding cultural resource impacts.

Effects under Alternative D

Effects would be similar to those identified for all alternatives. Like Alternative C, Alternative D also proposes periodic meetings as an effective and proactive approach to engage the tribes in planning future land use actions and avoiding cultural resource impacts.

Cultural Resources: Effects from Paleontological Resources Management

Effects Common to All Alternatives

Identification and protection measures for paleontological resources may also lead to the identification and protection of cultural resources. Scientific study of these resources may provide additional information on paleo-environments and other research questions relevant to the cultural resources of the WD.

Cultural Resources: Effects from Visual Resources Management

Effects Common to All Alternatives

VRM Class I and II designations provide protection of cultural resources where visual setting is a contributor to the significance of the property or the traditional use. Use of the visual resource contrast rating system during project planning could reduce the impact of visual intrusions on cultural resources, especially National Historic Trails. Visual intrusion on the setting of cultural resources must be considered in the Section 106 process and tribal consultation, regardless of VRM designation. Risk of impacts on cultural resources in VRM Class I areas could also be indirectly reduced where designations limit surface-disturbing activities in these areas.

Effects under Alternative A

Effects would be similar to those described for all alternatives. There would be no change in the current VRM designations and protection of the visual setting of cultural resources; national trail viewsheds would remain the same. Maintaining a VRM Class II objective within six miles of the CNHT centerline or to the visual horizon within the six-mile zone would continue to provide the highest objective among the alternatives for protecting the visual setting of the trail. However, current roads, utilities, and other developments are inconsistent with this objective. The lack of viewshed protection for the Lovelock Cave BCB would continue, and impacts on the setting of this resource may occur.

Effects under Alternative B

Lands designated as VRM Class I or VRM Class II would be less than all of the other alternatives. Protection of the visual setting of cultural resources and historic landscapes would be reduced from current levels and indirect protections VRM Class I areas would be reduced by 2,666 acres.

Reducing the current objective for the CNHT trail to VRM Class III overall and VRM Class IV along I-80 and the utility corridor would allow additional intrusion on the viewshed of the historic trail, would affect the visitor experience of the setting of the trail, and could indirectly result in the loss or damage of trail resources through development in the trail corridor. This designation provides the least protective objective among the alternatives for the visual setting of the trail. Adding a VRM Class III objective to BCBs would increase protection of the integrity of the visual setting of the Lovelock Cave Backwater Byway from current levels but would still allow moderate change that could reduce the future integrity of the visual setting.

Effects under Alternative C

Protection of the visual setting of cultural resources and historic landscapes would be increased from current levels. Lands designated as VRM Class I or VRM Class II would be greater than all of the other alternatives. Retaining the current VRM Class II objective for the CNHT and adding a VRM Class II objective to the Lovelock Cave BCB would provide the highest objectives among the alternatives for protecting the visual setting of the trail.

Effects under Alternative D

Effects would be similar to those described for Alternative C. Historic landscapes along CNHT would be managed to VRM Class II, Class III, and Class IV objectives, based on an assessment of the actual scenic values present. While a reduction from current objectives, this action would allow the BLM to assess impacts on the visual setting of trail resources based on the existing character of the landscape. There would be some reduction from Alternative C in overall VRM Class II acres and the indirect protection they may provide to the visual setting of cultural resources.

Cultural Resources: Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from cave and karst resources.

Effects under Alternative A

There are no actions addressing caves and karsts under this alternative and thus no impacts on cultural resources.

Effects under Alternative B

Caves and karsts are often the location of cultural resources and places that are important to Native Americans. Protecting caves and karsts is complementary to other cultural resource management goals if access for traditional uses is maintained and interpretation does not lead to use impacts from visitation or vandalism.

Effects under Alternative C

Effects would be similar to those for Alternative B. By allowing no surface disturbance within 500 feet of cave and karst entrances there would be additional protection for the setting of cultural resources and sites that may be associated the entrances. Avoiding publicizing locations could also protect cultural resources from vandalism, overvisitation, and interference with tribal uses.

Effects under Alternative D

Effects would be the same as those for Alternative B.

Cultural Resources: Effects from Livestock Grazing Management

Effects Common to All Alternatives

Livestock grazing is associated with ongoing impacts on cultural resources located on or near the ground surface. Improper grazing and trampling reduces vegetative cover and disturbs the soil, which accelerates erosion and weathering. Cultural resources are directly impacted by the modification, displacement and loss of artifacts, features, and middens, resulting in loss of valuable cultural resource information regarding site function, date of use, subsistence, past environments, and other research questions. Trampling and grazing can also impact TCPs, traditional use areas, and culturally important plants from the actions of livestock. Since cultural resources and TCPs are often associated with permanent and intermittent water sources and these areas are attractive to livestock, impacts on cultural resources are most likely to occur in these areas. Animals also seek shade in rock shelters and can damage cultural resource sites that are often present at those locations. Actions under all alternatives to protect springs and wetland riparian areas from livestock grazing would help protect water features and sources that may be culturally important to tribes and reduce the risk of direct disturbance and erosion of any cultural resources present. Actions that improve rangeland health could reduce the potential for impacts on cultural resources from direct disturbance, erosion, and wildland fire.

Effects under Alternative A

Effects would be the same as those identified for all alternatives. There would be no net change in the lands available for livestock grazing or the assigned AUMs.

Effects under Alternative B

Implementing adaptive grazing management and additional rangeland improvements would reduce the risk of impacts on cultural resources from disturbance and erosion. Acres of AUMs and allotments would remain the same.

Effects under Alternative C

Alternative C, Option 1

Reductions in grazed acres, closure of newly acquired lands, resting of land, less intensive grazing, and other measures to maintain the rangeland health would reduce the risk of impacts on cultural resources from ground disturbance, trampling, and erosion.

Alternative C, Option 2

Restricting livestock grazing would eliminate impacts on cultural resources from this activity.

Effects under Alternative D

Effects would be similar to those described under Alternative B. Because there would be fewer acres of land open to grazing, the potential for impacts on cultural resources on these 215,973 acres would be eliminated.

Cultural Resources: Effects from Minerals Management*Effects Common to All Alternatives****General***

Discretionary mineral exploration and development activities are subject to further cultural resource review at each stage of development either through the Section 106 process, mine regulations or permitting stipulations. Nondiscretionary mining notices are not federal undertakings, but 43 CFR 3809 specifically provides for the protection of cultural properties by prohibiting mining operators on claims of any size from knowingly disturbing or damaging them without mitigation. However, mining notices must be reviewed within 15 days, and it may be difficult to determine the presence of resources in areas that have not been inventoried. Potential impacts that would be addressed include ground disturbance, erosion, intrusions to setting, access leading to unauthorized collection or vandalism, and interference with traditional cultural uses and access.

Restricting minerals activities that would affect NRHP-listed or NRHP-eligible cultural sites or requiring additional mitigations would maintain protection for these resources. WSA mineral withdrawals for preserving natural resources would provide additional indirect protection for cultural resources and TCPs in those locations from ground disturbance and setting alteration. Provisions for concurrent and interim reclamation would reduce the amount of land disturbed at any one time, reducing the duration of alterations to setting and the potential for impacts due to erosion of cultural sites. Ongoing impacts on cultural resources in the vicinity of existing mines and drilling locations would continue.

Fluid

Surface exposures of hot springs are often places that are of cultural and religious importance to Native Americans. Exploration and development of geothermal resources in these areas may impact TCPs and could be difficult to adequately mitigate.

Locatable

Maintaining the withdrawal of Lovelock Cave from locatable mineral development would continue to protect this NRHP-listed resource from disturbance and alterations of setting. Requiring additional stipulations for mineral operations within a mile of the CNHT or an identified TCP or within a quarter mile of NRHP-listed or NRHP-eligible cultural sites provides additional protection for cultural resources and consideration of Native American values. All alternatives recognize that a

larger buffer area may be needed to avoid impacts on the setting of TCPs and avoiding interference with cultural practices.

RFDs

Based on reasonably foreseeable development scenarios, mineral exploration, development, and operations are expected to continue through the life of the RMP. Only a small proportion of the WD that would be open to mineral exploration and development under any of the alternatives is expected to be subject to disturbance or further development. Alterations to setting could impact a larger area. Further cultural resource review at the different stages of exploration and development would avoid or address many potential impacts on cultural resources; however, there may be residual effects on cultural resources, TCPs, and the setting of the National Historic Trails that may be difficult or impossible to adequately mitigate.

Effects under Alternative A

Current protections for cultural resources, TCPs, sacred sites, and National Historic Trails would be retained. No surface occupancy would be maintained for fluid and solid minerals for cultural and historical sites and visible remnants of National Historic Trails. Acreage subject to mineral withdrawals, closures, and surface use stipulations, which could reduce the risk of impacts on cultural resources, would be least under this alternative.

Effects under Alternative B

While acreage open and closed to mineral material disposal would remain the same as under Alternative A, 867,124 acres would be open only to government entities and thus would be subject to additional stipulations to protect cultural resources. These measures would provide additional protection for cultural resources and consideration of Native American values from ground disturbance, erosion, setting intrusions, access leading to unauthorized collection or vandalism, and interference with traditional cultural uses and access.

Alternative B would increase the amount of land closed to leasing of fluid and solid leasables and also would add surface use stipulations. Allowing no surface occupancy within a mile of the CNHT, or an identified TCP considered eligible for the NRHP, or a quarter mile of cultural sites that are eligible for listing listed on the NRHP would provide additional protection for cultural resources and their settings and consideration of Native American values. Any quarter-quarter-quarter section (10-acre parcel) within or intersected by these site would be subject to no surface occupancy restriction.

Effects under Alternative C

Alternative C includes more acres with cultural resource restrictions (closures, NSO stipulations, and mineral withdrawals) than all of the other alternatives and would provide the highest level of protection for cultural resources and consideration of Native American values among the alternatives.

Acreage closed to mineral material disposal and acres open only to government entities would increase. Lovelock Cave, Dave Canyon, Stillwater Mountains, and areas within a mile of identified TCPs known to be eligible or considered to be eligible for the NRHP would be closed to saleable minerals. Alternative C would greatly increase the amount of land closed to leasing of fluid leasables

and solid leasable, including land within a mile of the CNHT or an identified TCP considered eligible for the NRHP, or a quarter mile of cultural sites that are eligible for listing on the NRHP. Increasing the amount of land that would be withdrawn from locatable mineral leasing, including culturally sensitive areas, such as Stillwater Range, and an expansion of the buffer around Lovelock Cave, would provide additional protection for cultural resources and their settings and consideration of Native American values.

Effects under Alternative D

Management measure would provide protections for cultural resources, TCPs, and National Historic Trails that would be similar to those identified for Alternative C. This alternative includes fewer cultural resource restrictions and protective measures than under Alternative C but more than the other alternatives.

Cultural Resources: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

Recreational use and access can impact cultural resources through direct disturbance, soil compaction, altered surface water drainage, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism. The potential for impacts on cultural resources would increase as population and recreational use increases or is concentrated. The effect of repeated uses or visits over time could also increase the intensity of impacts due to natural processes. Continuing and enhancing interpretation and public education can vest the public in resource protection and respect for Native Americans and cultural values. Provisions for recreational permitting can reduce the potential for impacts from overuse. Updating the transportation plan and conducting site-specific NEPA analysis would be a federal undertaking, triggering further review of the potential impacts on cultural resources, TCPs, and trail segments.

Open OHV use can impact cultural resources, TCPs and trail segments through direct disturbance of site structure, artifact breakage and displacement, vandalism, soil compaction, altered surface water drainage, erosion, creation of new routes and visual and aural intrusions to setting. Motorized access could facilitate access to any TCPs for cultural uses, but it could also increase the risk of impacts on resources from unauthorized collection or vandalism. Restricting vehicle use to existing routes would reduce the risk of disturbing cultural resources located off travel routes and would reduce some impacts on setting, but impacts from access could still occur. Enforcing travel routes is difficult, and unauthorized user-created trails would continue to occur, potentially impacting cultural resources. Closure of areas to OHV use provides the most protection for cultural resources, if access for cultural purposes can be maintained.

All alternatives include the following measures designed to avoid impacting cultural resources and Native American values:

- Maintaining and enhancing interpretive programs for cultural sites;
- Pursuing partnerships and agency coordination for interpretive sites;
- Ensuring that construction is compatible with landscape settings; and

- Minimizing adverse effects on cultural resources through use restrictions, permit stipulations, and mitigation measures.

Effects under Alternative A

Under Alternative A, most of the WD would remain open to OHV use, and there would be fewer limited and closed areas than under the other alternatives. Class I segments of National Historic Trails would remain open to OHV use, as would OCTA Class II, III, IV, and V segments of CNHT and trail viewsheds. The potential risk of impacts on archaeological sites, TCPs, and trail resources in these areas from direct disturbance, soil compaction, altered surface water drainage, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism would continue and increase as population and use increases.

Effects under Alternative B

By reducing the acres that would be open to OHV use and increasing limited and closed areas, potential impacts due to dispersed motorized recreation on cultural resources located off travel routes would be reduced from current levels. However, since over 1,460,200 acres would remain open to OHV use, many archaeological sites, the Lovelock Cave BCB setting, National Historic Trails and associated setting, and TCPs and associated setting could be impacted. Designating SRMAs and RMZs for recreation could increase the intensity of use of these areas, increasing the risk of inadvertent and other damage to cultural resources and their setting. For example, the Blue Wing and Winnemucca Lake Playas RMZ is an important cultural resource area. Enhancing interpretive and educational opportunities as part of the recreation emphasis may help reduce inadvertent damage to cultural resources and Native American values present.

Effects under Alternative C

By placing the most restrictions on OHV use, Alternative C would minimize the potential impacts on cultural resources and their setting from this recreational use. By limiting recreational facility development, emphasizing recreational opportunities closer to town over those in remote areas, and permitting fewer organized commercial and group activities, impacts on cultural resource sites would be reduced and the potential intensity of impacts on cultural resources would be less dispersed and more localized.

Effects under Alternative D

Potential impacts on cultural resources off travel routes would be reduced from current levels by restricting most vehicle use to designated routes. OCTA Class II, III, IV, and V segments of CNHT and trail viewsheds and TCPs would be protected by limited designation and Class I segments of National Historic Trails.

Cultural Resources: Effects from Renewable Energy Management

Effects Common to All Alternatives

Potential impacts from renewable energy projects (solar, wind, and biomass) would include direct ground-disturbing activities, erosion, intrusions to setting, and access, leading to unauthorized collection or vandalism. The siting of wind energy facilities in particular can impact TCPs on

mountain ridges and can affect the visual setting of the historic trails and other cultural resources. All permits ROWs would be subject to stipulations, restrictions, and mitigation measures, which would reduce the potential for impacts on cultural resources and TCPs. Potential impacts would include direct ground-disturbing activities, erosion, intrusions to setting, and access, leading to unauthorized collection or vandalism. The siting of wind energy facilities in particular can impact TCPs on mountain ridges and can affect the visual setting of the historic trails and other cultural resources. All permits would be subject to stipulations, restrictions, and mitigation measures, which would reduce the potential for impacts on cultural resources and TCPs.

Effects under Alternative A

Impacts would be the same as those identified for all alternatives. Existing exclusion zones would be maintained, providing protections for cultural resources and their settings.

Effects under Alternative B

The designation of 716,528 acres of public lands as avoidance areas would provide protection of cultural resources, TCPs, etc. Permitted projects would have required stipulations to mitigate impacts on resources. By not designating exclusion zones, potential impacts from renewable energy projects would be the same as avoidance areas.

Effects under Alternative C

Alternative C provides 869,645 acres of public land as avoidance areas limited to ROW development. This designation would provide for more cultural resource protection than Alternatives A and B. Stipulations and mitigation measures would be required for permitted projects. Under Alternative C, 1,279,481 acres designated as exclusion zones provides for more resource protection than Alternatives A, B, and D.

Effects under Alternative D

Alternative D would allow for the designation of 1,773,199 acres of avoidance areas. This alternative would provide more protection than Alternatives B and C.

The management of 1,199,539 acres of exclusion zones would provide less resource protection than Alternative C.

This alternative would benefit cultural resources more than Alternative B due to the greater amount of acreage designated as avoidance areas, but less than Alternative C which has more acreage designated as exclusion areas potentially minimizing impacts.

Cultural Resources: Effects from Transportation and Access Management

Effects Common to All Alternatives

Avoiding duplication of roads that have common destinations can reduce risks of impacts on cultural resources from ground disturbance and access leading to unauthorized collection or vandalism. Road maintenance such as blading can disturb the physical integrity of cultural resources in road corridors where inventories are incomplete. However, maintenance can also prevent erosion and braiding and other processes that may threaten the integrity of cultural resources on or near

roads. Roads can also alter the visual setting of cultural resources. While roads can facilitate access to TCPs for cultural uses increased access can also lead to increased impacts on TCPs and archeological sites from looters and vandals.

Effects on cultural resources from OHV travel designations are discussed under Recreation, Visitor Outreach, and Services Management.

Effects under Alternative A

Effects would be similar to those identified for all alternatives.

Effects under Alternative B

Identifying and decommissioning roads that are contributing to resource damage could reduce physical impacts on cultural resources. Creation of alternative access could result in additional impacts on cultural resources or could open up undisturbed areas to future impacts associated with use and access.

Effects under Alternative C

Effects would be similar to those described for Alternative B.

Effects under Alternative D

Effects would be similar to those described for Alternative B.

Cultural Resources: Effects from Lands and Realty Management

Effects Common to All Alternatives

All alternatives include provisions to retain and acquire lands that contain significant cultural resources and TCPs, to maintain access to resources, and to reduce unauthorized uses allowing for federal protection of resources.

The acquisition of new land would provide long-term federal protection to any cultural resources included in the transaction and could enhance currently managed resources by consolidating holdings and potentially protecting the setting of cultural resources. Land tenure adjustments that allow for better access to public lands could facilitate cultural use of TCPs resources but could also lead to or increase the opportunity of vandalism or unauthorized collection or excavation of cultural resources. Exchange or disposal of lands to nonfederal entities would permanently remove federal protection of for any significant cultural resources present, which could be an adverse effect on cultural resources and TCPs and could result in the loss of National Historic Trail settings. Adverse effects on most other cultural resources could be mitigated through data recovery. All National Historic Trails segments would be retained in compliance with Section 203(a) of FLPMA. Exchanges, disposal, and subsequent landscape changes could also result in impacts on the setting of cultural resource, especially National Historic Trail resources. The setting of the Lovelock Cave BCB could be adversely affected by disposal of land. Siting communication sites on mountaintops could impact Native American sacred sites and other TCPs and could affect the visual setting of the historic trails and other cultural resources. Defining exclusion and avoidance areas reduces the potential for impacts on cultural resources resulting from discretionary actions at those locations.

Impacts on cultural resources from all lands and realty actions would be subject to further review. Disposal of public lands could place cultural resources into private ownership not allowing for federal protection.

Construction of ROWs, leases and permits development projects, roads, powerlines, pipelines, mineral material for federal highways, etc. could expose unidentified cultural resources to erosion and affect the visual settings of TCPs and historic sites.

Impacts on cultural resource from all lands and realty actions would be subject to further review. All ROWs would be subject to BMPs, SOPs, IOPs, stipulations, restrictions, and mitigation measures, would be implemented to reduce potential impacts.

Effects under Alternative A

By defining 2,989,030 acres as suitable for disposal and by not designating avoidance areas or exclusion zones for lands and realty and ROWs, current management has the most amount of land that would be considered for activities that could impact cultural resources. Impacts on cultural resources may be mitigable, but Alternative A is less protective of TCPs and other cultural resources that are difficult or impossible to mitigate.

Effects under Alternative B

Fewer overall acres, 2,989,030, would be designated as suitable for disposal and avoidance areas, 716,528 acres, would be increased resulting in less land that would be considered for activities that could impact cultural resources. No exclusion zones for lands and realty and ROW would be unchanged are identified under Alternative B, allowing for the greatest amount of ROW development increasing the potential for impacts on cultural resources.

Effects under Alternative C

Identifying 1,215,963 acres of public lands as suitable for disposal could remove cultural resources from federal protection. Alternative C would dispose of less public lands than Alternatives A, B and D.

Exclusion zones under Alternative C, 1,279,481 acres, allows for the most protection of cultural resources by restricting lands and realty actions that could implement surface disturbance activities. The designation of 869,645 acres of avoidance areas would allow more protection of resources than Alternative A and B, but could allow ROW development with the implementation of required special stipulations.

Designation of utility corridors could provide a beneficial impact to cultural resources. Requiring co-location of utility ROWs in corridors could reduce adverse impacts on unidentified cultural resources, by reducing the issuance of individual ROWs. Alternative C has fewer corridor options than Alternative D.

Transferring the identified lands to BIA or Fort McDermitt Paiute and Shoshone Tribe could remove unidentified cultural resources from BLM management but could continue to have federal cultural protection

The construction of water importation and exportation projects could impact cultural resources through ground disturbing activities. Mitigation measures and special stipulations would be required for protection.

Effects under Alternative D

Identifying 1,350,263 acres suitable for disposal could remove more cultural resources from federal protection than Alternative C and less than Alternatives A and B. Designating 1,773,199 acres as avoidance areas could minimize impacts allowing for the greatest amount of protection, more than Alternatives A, B and C. Managing 1,199,539 acres as exclusion zones would provide protection of cultural resources by not allowing ROW development, but less protection than Alternative C.

The construction of water importation and exportation projects could impact cultural resources through ground disturbing activities. Mitigation measures and special stipulations would be required for protection.

Designation of utility corridors could provide a beneficial impact to cultural resources. Requiring co-location of utility ROWs in corridors could reduce adverse impacts on unidentified cultural resources, by reducing the issuance of ROWs. Alternative D provides more corridor options than Alternative C.

Transferring the identified lands to BIA or Fort McDermitt Paiute and Shoshone Tribe could remove unidentified cultural resources from BLM management but could continue to have federal cultural protection.

The construction of water importation and exportation projects could impact cultural resources through ground disturbing activities. Mitigation measures and special stipulations would be required for protection.

Cultural Resources: Effects from ACEC/RNA Management

Effects Common to All Alternatives

Managing lands as ACEC or RNAs could directly or indirectly provide long-term protection of cultural resources by restricting incompatible uses. Protecting cultural and natural resource values in ACECs would also decrease the risk of impacts on identified or unidentified cultural resources present. Under all alternatives, the risk of impacts on cultural resources from ground-disturbing activities, erosion, intrusions to setting, and access leading to unauthorized collection or vandalism would be reduced in these areas by restricting other actions.

Effects under Alternative A

Effects would be the same as those identified for all alternatives. Current protections for the 60-acre Osgood Mountains ACEC would also provide some additional protection of cultural resources within. By not creating any new ACECs, protection of cultural resources and places of Native American cultural and religious importance would not be addressed in the Pine Forest, Raised Bog, and Stillwater ACECs, which are proposed under Alternatives C and D.

Effects under Alternative B

Effects would be the same as those identified for Alternative A.

Effects under Alternative C

By designating additional ACECs there would be fewer risks of impacts on cultural resources within the designated land from ground-disturbing activities, erosion, intrusions to setting, and access that would lead to unauthorized collection or vandalism. The creation of the Stillwater ACEC would provide additional protection for recognized locations important for contemporary Native American traditional and religious uses. Under Alternatives C and D, more land would be placed in ACECs and RNAs than the other alternatives, and there would be more restrictions on ground-disturbing and other activities, including communication sites that could impact cultural resources.

Effects under Alternative D

Effects would be the same as those identified for Alternative C.

Cultural Resources: Effects from Backcountry Byways Management

Effects Common to All Alternatives

Segments of the CNHT follow the route of the Lovelock Cave BCB. Lovelock Cave is listed on the NRHP and is one of the most important archaeological sites in the Great Basin. Efforts to preserve the setting of the cultural landscapes and viewshed associated with the trail and the cave are complementary to other cultural resource management measures. The Lovelock Cave BCB includes a driving tour with historic (including National Historic Trails), prehistoric, and paleo-environmental interpretive stops and a nature trail with ethnobotanical stops. Continuing to manage and enhance the byway would continue to improve the visitor experience and would enhance public appreciation and protection of cultural resources. Developing additional BCBs could lead to more public interpretation of cultural resources, but it could also increase the risk of impacts on resources from unauthorized collection or vandalism.

Effects under Alternative A

Effects would be the same as those identified for all alternatives. Evaluation of the Gold Country, Silver, and Blue Lakes Byways under Alternatives A and D could lead to development of these in the future. The Gold and Silver BCBs include historic mining sites, and the Blue Lakes and Knott Creek BCBs are in areas where prehistoric sites and Basque aspen carvings are found. Development of these could lead to interpretation of these cultural resources to the public enhancing public appreciation and protection of these resources.

Effects under Alternative B

Effects would be the same as those identified under Effects Common to All Alternatives.

Effects under Alternative C

Effects would be the same as those identified under Effects Common to All Alternatives.

Effects under Alternative D

Effects would be the same as those described for Alternative A.

Cultural Resources: Effects from National Historic Trails Management

Effects Common to All Alternatives

National Historic Trails (NHTs) are cultural resources. Management of NHTs includes consideration of cultural, recreation, visual and natural landscape elements, values, qualities and settings. Proposed management measures are described in both the cultural resources and NHT sections.

Cultural Resources: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There likely would be no impacts on cultural resources resulting from WSR management. Any management actions protective of cultural resources along NWSRS eligible corridors would be implemented according to BMPs, SOPs, as well as the goals, objective, and actions related to other resources.

Cultural Resources: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

Managing 416,652 acres as WSAs to maintain wilderness characteristics would restrict surface-disturbing activities and would indirectly reduce the potential for direct disturbance of cultural resources, alterations to visual and aural setting, and access leading to vandalism and unauthorized collecting. Culturally important species and areas that are culturally significant to tribes may be protected, but there may also be loss of access to TCPs. If Congress releases the WSAs and they are not located within a designated ACEC, the risk of impacts on cultural resources from future surface-disturbing activities and other incompatible uses would increase.

Effects under Alternative A

Effects would be the same as those identified under Effects Common to All Alternatives.

Effects under Alternative B

Effects would be the same as those identified under Effects Common to All Alternatives.

Effects under Alternative C

Effects would be similar to those identified for all alternatives. Managing an additional 240,223 acres to protect wilderness characteristics in eight areas includes closing them to mineral leasing and establishing ROW exclusion zones. Priority habitat would further restrict surface-disturbing activities and would reduce the potential for direct disturbance of cultural resources. Managing to maintain wilderness characteristics and priority habitat would also reduce the potential for indirect

impacts on the visual and aural setting of cultural resources and would reduce the potential for impacts due to public access from overuse, vandalism and unauthorized collecting. Culturally important species and areas that are culturally significant to tribes may be protected, but there may also be loss of access to TCPs.

Effects under Alternative D

Effects would be the same as those identified under Effects Common to All Alternatives.

Cultural Resources: Effects from Public Health and Safety Management

Effects Common to All Alternatives

Collecting information related to abandoned mines may contribute to understanding and future interpretation of historic mining resources. Safety considerations and hazard reduction could be in conflict with cultural resource and Native American values if historic structures and features are removed or modified, if cleanup of hazards involves ground disturbance, or if access and use of culturally significant springs are limited without cultural resource review and Native American consultation.

Cultural Resources: Effects from Sustainable Development Management

Effects Common to All Alternatives

There are no actions common to all alternatives that would impact cultural resources. If sustainable development proposals are pursued under Alternatives B, C, and D, effects would be subject to further cultural resource review and would be similar to other land and realty actions. Disposal of public lands is allowed under all except Alternative A. Land reuse may prevent future land disturbance and impacts on cultural resources at other locations. While cultural resources would probably not be directly impacted, settings of National Historic Trails, TCPs, BCBs, and other cultural resources could be impacted. Reuse may continue alterations to the visual setting of cultural resources, or it could delay for several years the eventual reclamation and restoration of the visual setting.

Cultural Resources: Cumulative Effects

Past and Present Actions

In the past, livestock grazing has impacted cultural resources in areas where concentrated grazing has occurred. Concentrated grazing and trampling reduces vegetative cover and disturbs the soil, accelerating erosion and weathering. Cultural resources have been directly impacted by the modification, displacement and loss of artifacts, features, and middens, resulting in loss of valuable cultural resource information regarding site function, date of use, subsistence and past environments. From 1982 to the present, current land use plans have employed management actions to reduce concentrated grazing and have improved conditions based on progressing towards or meeting standards for rangeland health. These actions have reduced impacts on cultural resources from livestock grazing.

Although, most impacts on cultural resources from minerals, lands and realty, renewable energy and permitted recreation events have been avoided or mitigated through implementation of Section 106 of the National Historic Preservation Act, indirect impacts from increased access to cultural sites, looting and changes in setting have sometimes occurred. Recreational looting and excavation of cultural resource sites have damaged and destroyed cultural resources sites. Although these impacts continue, monitor and patrol by law enforcement and heritage education outreach efforts have helped to reduce these impacts. Unrestricted OHV travel has damaged cultural resources through cross country travel and creating new roads or trails increasing access to cultural resource sites. Impacts are difficult to quantify due to dispersed use. Impacts which have occurred to cultural resources in the past from WHB are similar to those from livestock grazing. WHB management actions have reduced concentrations of WHB in culturally sensitive areas, thereby reducing impacts on cultural resources. In the past fire has resulted in direct disturbance or loss of cultural resources primarily through the destruction or modification of historic and ethnographic wooden structures, features, and culturally modified trees. Wildfire has also exposed large areas where vegetation has burned increasing the potential for illegal gathering of artifacts. Fire control and suppression involve ground-disturbing activities that have also directly impacted cultural resources by damaging or destroying features and altering the spatial relationships of archaeological sites. Impacts on cultural resources from fire and fire suppression have been reduced in recent years by BLM fire management personnel working closely with cultural resource specialist to avoid damage to cultural resource sites.

Impacts from post-fire seeding and fuels projects have been avoided through compliance with Section 106 of the National Historic Preservation Act. Implementation of BMPs, SOPs, project specific mitigation measures, permit stipulations, inventory, and avoidance have all contributed to reduced impacts.

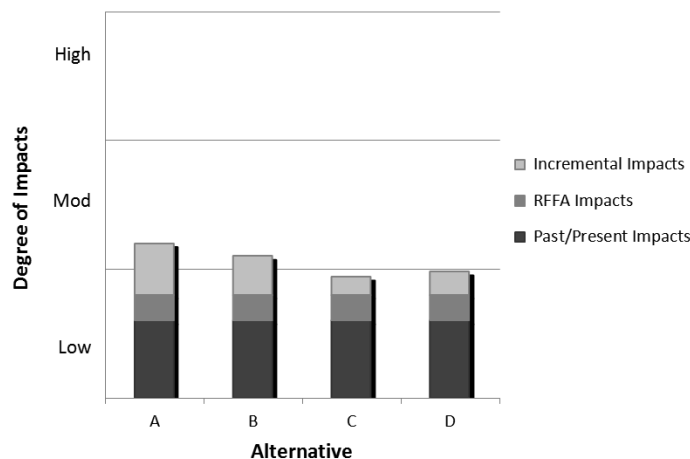
Reasonably Foreseeable Actions

Implementation of livestock grazing and WHB management in order to achieve land health standards would result in fewer areas of concentrated grazing and associated impacts on cultural resource sites. No livestock grazing would eliminate new impacts on cultural resources from this activity. Increasing mineral, lands and realty, and renewable energy actions would increase potential for indirect impacts on cultural resources from changes in setting, increased access to sites and looting. Some historic sites and prehistoric sites such as Lovelock Cave which are listed on or eligible to the National Register under Criteria A and segments of National Historic Trails adjacent to areas of growth and development would be most susceptible to future impacts on setting. The potential for impacts on cultural resources from direct disturbance, erosion, impacts on setting, increased access to sites and vandalism would increase as population and dispersed recreational use increase. Recreation management with respect to OHV travel would include limits of uses which would help protect cultural resources depending on the number of acres designated as open, limited, or closed. Habitat restoration and management of priority wildlife habitat and priority watersheds would include use restrictions, reducing potential disturbance to cultural resources. Construction of fuel breaks with emphasis at a landscape scale would reduce fire spread potential, thereby reducing the size of burned areas and potential damage to cultural resources. However, since more fires are anticipated in the future and the number of acres burned are anticipated to be similar to past and present, impacts on cultural resources from wildfire and wildfire suppression would be similar to past and present. Continued cooperation between fire management and cultural resource specialists and improvements in technology are anticipated to reduce these impacts.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Incremental cumulative impacts of the past, present and RFFAs coupled with proposed management actions would vary depending on which alternative is selected. Most impacts on cultural resources from minerals, lands and realty, renewable energy, permitted recreation events and fuels projects have been avoided or mitigated through implementation of Section 106 of the National Historic Preservation Act. This would continue under all alternatives. Some incremental impacts would occur from the preceding actions due increased access to cultural sites, impacts on setting, and looting. Under Alternative C protection of the visual setting of cultural resources, National Historic Trails, and historic landscapes would be increased from current levels. Incremental impacts from recreation use and OHV travel would be dependent on travel management designations and associated restrictions. Under Alternative A, allowing open OHV use on most of the planning area and designating fewer limited and closed areas than under the other alternatives would result in moderate incremental impacts on cultural resources and their settings. Incremental impacts under Alternative B would be less, but similar. Incremental impacts under Alternatives C and D would be low with Alternative C having the least incremental impacts. Incremental impacts from livestock and WHB grazing would be moderate under Alternatives A and B and low under Alternatives C and D. Management of priority wildlife habitat, priority watersheds, special status species management, and ACECs would protect and reduce the potential of damage to cultural resources by restricting certain uses depending on the number of acres identified or designated for management. Landscape level fuel breaks would protect areas containing cultural resource from wildfire while incremental impacts from wildfire and wildfire suppression are anticipated to be reduced. Differences in cumulative impacts on cultural resources among the alternatives are graphically represented in Figure 4-9.

Figure 4-9. Cumulative Impacts on Cultural Resources by Alternative



Degree of Impact Assumptions: Management of priority wildlife habitat, priority watersheds, special status species management, and ACECs would protect and reduce the potential of damage to cultural resources by restricting certain uses. Alternative C is assumed to have fewer disturbances than Alternative D as more areas are proposed with use restrictions.

Note: Degree of impacts is qualitative in nature.

4.2.14 Paleontological Resources

Summary

This section presents potential impacts of the alternatives on paleontological resources. The planning area has not been systematically surveyed for paleontological resources. However, numerous paleontological localities have been identified by independent researchers. See Chapter 3 for a discussion of the paleontological resources in the planning area.

Some of the most important paleontological resources in the planning area include Mesozoic ichthyosaurian fossils and Triassic hybodont shark remains. Fossil mammal and fish remains also occur in the planning area. The planning unit also includes a wealth of invertebrate paleontological resources, including flora fossils and several sources of paleoenvironmental information. The Lund Petrified Forest is a petrified wood paleoflora in Washoe County between Gerlach and Vya. Lands surrounding the Lund Petrified Forest have been withdrawn from mineral entry and also from use for disposal sites.

Assessment of potential effects on paleontological resources is addressed under FLPMA, NEPA, other federal regulations, and BLM orders. Pursuant to FLPMA, the BLM has issued regulations that provide additional protection. These regulations prohibit the removal of any scientific resource or natural object without authorization. There are exceptions to this prohibition for small quantities of common invertebrate fossils and petrified wood. The BLM manages paleontological resources for their scientific, educational, and recreational values and to ensure that any impacts are mitigated.

Impacts on paleontological resources occur by erosion, OHVs, excavation, theft, vandalism, and surface-disturbing activities, such as trampling by animals and humans. Experience has shown that damage, theft, and vandalism are usually concentrated near roads and trails. Impacts on paleontological resources may increase because of additional visitation to the areas containing these resources.

Overall, objectives and actions associated with other resources that result in closure to surface disturbance activities would have beneficial impacts (less chance of disturbance) to any paleontological resources that might be present. These other objectives and actions are referenced below.

Methods of Analysis

Methods and Assumptions

This analysis is based on information compiled by a BLM contractor, paleontologist David Lawler (Lawler 1978; Lawler and Roney 1978), as well as from reports by J. R. Firby (Firby 1995), Jefferson (no date) and other researchers.

The following assumptions regarding the resource base and management practices were considered in the analysis:

- For the purpose of assessing impacts, only those objectives and actions potentially affecting vertebrate and scientifically important paleontological resources were considered;

- The greatest potential for impacts would result from actions that include direct large-scale disturbance of bedrock, weathered bedrock, or unconsolidated alluvial deposits that may include fossils of more recent geologic age;
- All authorized surface-disturbing activities include assessment of paleontological resources in project area and sufficient mitigation to reduce impacts on those resources;
- Excavation can reveal previously undiscovered resources and potentially allow research and interpretive uses;
- While paleontological resources are often discovered only through being exposed by erosion, exposed fossils or scientifically important paleontological resources can be damaged by wind and water erosion. Other sources of damage include animal and human intrusion, natural deterioration, and development and maintenance activities;
- Increased access associated with new development and increased recreation use leads to increased access to paleontological sites;
- Vandalism and unauthorized collecting can destroy a feature or remove it from its context and availability for scientific study; and
- Public education increases public appreciation and awareness of the need for protection, but publication of specific locations leads to increased visitation.

The area of analysis for cumulative effects on paleontological resources is defined as northwestern Nevada.

Paleontological Resources: Effects from Air Quality Management

Effects Common to All Alternatives

There likely would be no impacts on paleontological resources resulting from air quality management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Geology Management

Effects Common to All Alternatives

Paleontological resources or impacts would not be managed as unique geologic resources. Even though they are managed separately, any unknown paleontological resources within the boundaries of areas protected as unique geologic features would also be protected. For example, one of the geologic resources being considered to be potentially unique includes Lake Lahontan shore features (e.g., gravel bars or shore terraces). These features could include paleoenvironmental information. Should any examples of the Lake Lahontan shore features be designated as a unique geologic feature, any paleoenvironmental information present would also be preserved.

Effects under Alternative A

Other than maintaining current OHV use within exclusion zones, there are no set management objectives or actions under Alternative A concerning unique geologic resources. Mitigations and restrictions would be determined on a case-by-case basis.

Effects under Alternative B

Regarding mining activities, unique geologic resources would be protected less under Alternative B than under Alternative A, where cases may include stronger limitations or mitigations. Regarding OHV use, limitations under Alternative B would be greater than those under Alternative A, and less than those under Alternative C. Any unknown paleontological resources within the areas protected as unique geologic features would also be protected.

Effects under Alternative C

Regarding mining activities, the protection of the unique geologic resources would be greatest under Alternative C. Regarding OHV use, limitations under Alternative C would be greater than those under Alternatives A, B, and D. Any unknown paleontological resources within the areas protected as unique geologic features would also be protected.

Effects under Alternative D

Few if any impacts on paleontological resources would occur from geology management. Areas containing paleontological resources near unique geologic resources would be protected. Any additional surface disturbance necessary to avoid geologic resources would be evaluated for paleontological resources and any impacts would be mitigated.

Paleontological Resources: Effects from Soil Resources Management

Effects Common to All Alternatives

There likely would be no impacts on paleontological resources resulting from soil resources management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Water Resources Management

Effects Common to All Alternatives

There likely would be no impacts on paleontological resources resulting from water resources management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

There likely would be no impacts on paleontological resources resulting from forest or woodland products management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Vegetation—Invasive and Noxious Species Management***Effects Common to All Alternatives***

There likely would be no impacts on paleontological resources resulting from weeds management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Chemical and Biological Control***Effects Common to All Alternatives***

There likely would be no impacts on paleontological resources resulting from chemical and biological control management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Vegetation—Rangeland Management***Effects Common to All Alternatives***

Soft marshy areas can contain deposits of paleoenvironmental resources (e.g., pollen). The management objectives and actions under rangeland management would result in various numbers of livestock and WHB in these types of areas. These areas could experience increased erosion, resulting in the loss of the paleoenvironmental information if such paleontological resources were not known to be present and otherwise protected.

Other than potential damage to undiscovered paleontological resources, there likely would be no impacts on paleontological resources resulting from rangeland management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Vegetation—Riparian and Wetlands Management***Effects Common to All Alternatives***

There likely would be no impacts on paleontological resources resulting from riparian and wetlands management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Fish and Wildlife Management***Effects Common to All Alternatives***

There likely would be no impacts on paleontological resources resulting from fish and wildlife management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Special Status Species Management***Effects Common to All Alternatives***

If unknown paleontological resources were present within the boundaries of areas protected from surface disturbances due to special status species management, resources would also be protected. If not, there likely would be no impacts on paleontological resources resulting from special status species management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Wild Horse and Burro Management***Effects Common to All Alternatives***

There likely would be no impacts on paleontological resources resulting from WHB management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Wildland Fire Management***Effects Common to All Alternatives***

Allowing conditional fire suppression management for a benefit (under Alternatives B and D) and fire suppression can involve ground-disturbing activities at depths that can directly affect any undiscovered paleontological resources, if present. These actions include constructing fire lines, bulldozing access roads, and using heavy equipment. High severity fire can also damage surface fossils, including cracking, spalling, and oxidizing. Fire can result in impacts through erosion and the increased visibility of paleontological resources. Fire can also remove vegetation and expose previously undiscovered resources, allowing for their discovery, study and protection; however, locations exposed by fire can be susceptible to damage by subsequent erosion, vandalism, and unauthorized collecting.

Impacts on undiscovered paleontological resources cannot be assessed because the type, quality, and location of the resources are unknown. Given that the location of any surface-disturbing activities cannot be predicted, the intersection of the undiscovered resources and the potential future activities also cannot be predicted. There likely would be no impacts on known paleontological resources locations resulting from wildland fire management objectives or actions under any of the alternatives. With respect to effects on known paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Cultural Resources Management***Effects Common to All Alternatives***

There likely would be no impacts on paleontological resources resulting from cultural resource management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Tribal Consultation Management***Effects Common to All Alternatives***

There likely would be no impacts on paleontological resources resulting from tribal consultation objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Paleontological Resources Management***Effects Common to All Alternatives***

Beneficial impacts on paleontological resources are anticipated. Measures under all of the alternatives call for an inventory of areas that may contain paleontological resources before land use authorizations. Alternatives B, C, and D also include additional protective management measures to identify priority geographic areas for field inventory and to develop management recommendations (including mitigation measures) to protect any identified resources on a case-by-case basis. These measures would increase the identification of previously unknown paleontological resources, allowing them to be protected from disturbance and reducing potential for impacts.

Permits would be required to remove fossils for scientific purposes. As appropriate, physical conservation measures, such as signing, fencing, erosion control, and administrative conservation, would be implemented to reduce impacts on the resources. In addition, law enforcement would patrol selected areas to help prevent damage to or theft of paleontological resources.

Collecting fossils from within the George W. Lund Petrified Forest would be prohibited, thereby increasing the level of protection and reducing the current impacts.

Education opportunities would be promoted and partnerships with academic and scientific organizations would be pursued. Materials would be published to promote public awareness and appreciation of the WD paleontological resources. Scientific research information concerning the locations of specific resources would be published only if increased visitation would not harm the resource.

Effects under Alternative A

Under Alternative A, there would be no additional management objectives or actions other than those common to all of the alternatives. Alternative A is equivalent to Alternative B.

Effects under Alternative B

Under Alternative B, there would be no additional management objectives or actions other than those common to all of the alternatives. Alternative B is equivalent to Alternative A.

Effects under Alternative C

While physical conservation measures, such as signing, fencing, erosion control, and administrative conservation, would be implemented under all of the alternatives, under Alternative C, these measures would not be implemented if they could result in increased visitation. Other actions,

including withdrawing land, closing public access, and prohibiting OHV use, would be used to protect vulnerable paleontological deposits from disturbance and to reduce the potential for impacts.

While all alternatives would seek to publish materials to promote public awareness and appreciation of the WD paleontological resources, Alternative C would limit publication to those materials that would not result in increased visitation and the resulting increase in vandalism and unauthorized collecting. The protections of paleontological resources are greatest under Alternative C. Therefore, Alternative C would result in the fewest impacts on paleontological resources.

Effects under Alternative D

Under Alternative D, other actions, including withdrawing land, closing public access, and prohibiting OHV use, would be used as appropriate to protect vulnerable paleontological deposits from disturbance, thereby reducing the level for impacts. The protection of paleontological resources under Alternative D is greater than those under Alternatives A and B and less than those under Alternative C.

Paleontological Resources: Effects from Visual Resources Management

Effects Common to All Alternatives

There likely would be no impacts on paleontological resources resulting from visual resources management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Cave and Karst Resources Management

Caves frequently contain pack rat middens, which are an important source of paleoenvironmental information.

Effects Common to All Alternatives

Increased visitation would result in a greater risk of impacts from disturbance, vandalism, and unauthorized collecting as access is improved and locations become known.

Effects under Alternative A

There would be no objectives or management actions under Alternative A, and any protections would be on a case-by-case basis.

Effects under Alternative B

Caves frequently contain pack rat middens, which are an important source of paleoenvironmental information. Alternative C is most protective; Alternatives B and D provide similar protections.

Alternative B includes actions for identifying caves, for implementing appropriate mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and installing signs to protect the unique geologic features and wildlife habitat. These mitigations would also reduce the potential for disturbance of pack rat middens. Alternative B includes greater protections for cave resources (e.g., closures and physical barriers) than Alternative A. The education and public awareness provisions

would increase visitation to those areas, resulting in a greater risk of impacts from disturbance, vandalism, and unauthorized collecting as access is improved and locations become known.

Effects under Alternative C

Alternative C includes actions for identifying caves, for implementing appropriate mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and installing signs to protect the unique geologic features and wildlife habitat. These mitigations would also reduce the potential for disturbance of pack rat middens. Alternative C includes greater protections for cave resources (e.g., closures and physical barriers) than does Alternative A and have essentially equivalent protections as Alternative B. However, under Alternative C, the education and public awareness provisions would be limited to those that would not increase visitation and would involve less risk of impacts from disturbance, vandalism, and unauthorized collecting than under Alternatives B and D.

Effects under Alternative D

Alternative D includes actions for identifying caves, for implementing appropriate mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and installing signs to protect the unique geologic features and wildlife habitat. These mitigations would also reduce the potential for disturbance of pack rat middens. Alternative B includes greater protections for cave resources (e.g., closures and physical barriers) than does Alternative A. The education and public awareness provisions would increase visitation to those areas, resulting in a greater risk of impacts from disturbance, vandalism, and unauthorized collecting as access is improved and locations become known.

Paleontological Resources: Effects from Livestock Grazing Management

Effects Common to all Alternatives

The areas around springs can be either erosional or depositional. Where there are seasonal deposits of sediments around springs, these deposits can contain pollen or other paleoenvironmental materials. Disruption of these seasonal depositions impacts the scientific value of these materials.

Grazing animals tend to congregate in riparian areas including springs. Potential impacts of grazing include increased sediment loading from soil eroded by wind and water due to vegetation loss, direct soil disturbance, and runoff concentrated into animal trails, with consequent enhanced erosion. Spring developments and livestock and WHB concentrations in the vicinity of springs could affect any deposition in the area of springs, so potential deposition of paleoenvironmental materials could also be affected reducing the scientific value of these materials.

With the exception of Alternative C, Option 2, which would eliminate livestock and WHB grazing, livestock and WHB grazing under all of the alternatives is expected to continue to have impacts on springs and associated paleoenvironmental deposits.

Effects under Alternative A

Impacts on paleontological resources from livestock grazing include direct damage to paleontological remains and paleoenvironmental deposits from concentrated grazing especially in riparian areas containing these deposits. Other impacts would include possible damage to resources

due to the construction of range improvements. Developing and adaptive managing actions to achieve land health standards and manage livestock to prevent overgrazing would reduce grazing impacts on paleontological resources. Developing mitigation measures through site specific NEPA analysis would further reduce impacts on paleontological resource due to range improvement projects.

Currently there are about 296,008 acres of rangeland closed to livestock grazing. Paleontological remains and paleoenvironmental deposits located within these closed areas would be protected from livestock grazing.

Effects under Alternative B

Alternative B designates the same number of acres closed to grazing as does Alternative A. . Paleontological resources would remain protected in areas closed to grazing. Implementing actions to achieve land health and mitigating impacts from the development of new springs to support livestock grazing are the same as that under Alternative A.

Effects under Alternative C

Alternative C, Option 1

Alternative C, Option 1 calls for closing about 2,000 more acres to grazing than Alternative A, so it would be slightly more protective of paleoenvironmental deposits within these closed areas.

Alternative C, Option 2

Alternative C, Option 2 excludes grazing, which would substantially protect and reduce impacts on paleoenvironmental deposits.

Effects under Alternative D

Alternative D would close about 23,000 acres more to grazing than would Alternative A. Closure of these areas would provide more protection to paleontological resources compared to Alternatives A, B, and C-Option 1.

Paleontological Resources: Effects from Minerals Management

Effects Common to All Alternatives

If present, paleontological resources could be impacted by the extent and depths of ground disturbance associated with saleable and locatable mineral development. However, the potential for paleontological resources would be assessed before these activities were authorized, and avoidance or mitigations would be required.

Effects under Alternative A

Under Alternative A, 418,938 acres would be closed to saleable mineral disposition, 446,887 acres would be closed to fluid leasable minerals activities, 416,652 acres would be closed to solid leasable minerals activities, and 6,543 acres would be withdrawn from locatable mineral activities. Paleontological resources would be protected from these mining activities within these areas, thereby

reducing the potential for impacts from disturbance. The Raised Bog is considered to have potential to have a 10,000-year old pollen record. Under Alternative A, fluid minerals leasing would only be allowed within the Raised Bog area with NSO stipulations. This could provide some protection for paleontological and paleoenvironmental resources in this area if pollen record is not affected and any subsurface paleontological remains are avoided or mitigated.

Effects under Alternative B

Under Alternative B, 418,938 acres would be closed to saleable mineral disposition, 1,132,594 acres would be closed to fluid leasable minerals activities, 1,124,266 acres would be closed to solid leasable minerals activities, and 6,543 acres would be withdrawn from locatable mineral activities. Paleontological resources would be protected from mining activities within these areas, thereby reducing the potential for impacts from disturbance. Alternative B includes the same amount of land closed to the various mining activities, except for solid leasable minerals activities. For these minerals activities, more area would be closed under Alternative B than under Alternative A.

Under Alternative B, there would be no restrictions on mining within the Raised Bog area leading to potential impacts on the potentially 10,000-year-old pollen record.

Effects under Alternative C

Under Alternative C, 837,049 acres would be closed to saleable mineral disposition, 4,455,028 acres would be closed to fluid leasable minerals activities, 4,453,645 acres would be closed to solid leasable minerals activities, and 281,892 acres would be withdrawn from locatable mineral activities. Paleontological resources would be protected from these mining activities within these areas, thereby reducing the potential for impacts from disturbance. More land would be closed to the various types of mining activities under Alternative C than under Alternatives A, B, or D. Paleontological and paleoenvironmental resources at the Raised Bog and other ACECs would be protected from impacts from solid and fluid mineral leasing and locatable minerals.

In addition, the area of the George Lund Petrified Forest withdrawal would be enlarged to a total of 141 acres, further reducing potential impacts on paleontological resources from disturbance associated with mining activities.

Effects under Alternative D

Saleable mineral activities and fluid and solid leasable minerals activities would be allowed within one quarter mile of an identified paleontological resource classified as being of scientific or educational interest. To accomplish this, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the site or the quarter-mile buffer line would be subject to NSO.

Under Alternative D, 694,991 acres would be closed to saleable mineral disposition, 1,740,928 acres would be closed to fluid leasable minerals activities, 1,740,930 acres would be closed to solid leasable minerals activities, and 7,296 acres would be withdrawn from locatable minerals activities. Paleontological resources would be protected from mining activities within these areas, thereby reducing the potential for impacts from disturbance. More land would be closed to the various types of mining activities under Alternative D than under Alternatives A or B but less land than under

Alternative C. Paleontological and paleoenvironmental resources at the Raised Bog and other ACECs would be protected from impacts from solid and fluid mineral leasing.

The rights to locatable minerals could be acquired in the Raised Bog, Stillwater, and Pine Forest ACECs and in other parts of the WD Planning Area, but proposals for locatable mineral operations would be restricted within a quarter mile of identified paleontological resources classified as being of scientific or educational interest. This would provide protection for paleoenvironmental resources in these areas. However, the Raised Bog pollen record could be impacted if it could not be avoided or mitigated.

In addition, the area of the George Lund Petrified Forest withdrawal would be enlarged to a total of 141 acres, further reducing potential impacts on paleontological resources from disturbance associated with mining activities.

Paleontological Resources: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

OHV use can damage surface manifestations of paleontological resources, if present, and can increase access to localities. Increased access increases the potential for disturbance and unauthorized collection. Paleoenvironmental deposits can also be impacted by OHV use in areas where they are present.

Effects under Alternative A

Alternative A closes more acres to OHV use than does Alternative B but closes less than under Alternatives C and D. However, Alternative A does not include limits on OHV use in other areas. Paleontological and paleoenvironmental resources in closed areas would be protected, but those in unrestricted OHV areas could be impacted.

Effects under Alternative B

Alternative B closes the least acreage to OHV use but applies limits to OHV use on a large amount of land. Paleontological and paleoenvironmental resources in closed and limited areas would be protected, but those in unrestricted OHV areas could be impacted.

Effects under Alternative C

Alternative C calls for closing the most land to OHV use and the most land with limits applied to OHV use. Paleontological and paleoenvironmental resources in closed and limited areas would be protected, but those in unrestricted OHV areas could be impacted.

Effects under Alternative D

Alternative D closes more land to OHV use and applies limits to OHV use on more land than does Alternative B but less than under Alternative C. Paleontological and paleoenvironmental resources in closed and limited areas would be protected, but those in unrestricted OHV areas could be impacted.

Paleontological Resources: Effects from Renewable Energy Management***Effects Common to All Alternatives***

There likely would be no impacts on paleontological resources resulting from renewable energy management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Transportation and Access Management***Effects Common to All Alternatives***

Increased transportation or access to any area would increase the level of visitation, resulting in greater potential for impact on any paleontological resources that might be present. There likely would be no specific impacts on known paleontological resources resulting from transportation and access management objectives or actions under any of the alternatives. With respect to effects on known paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Lands and Realty Management***Effects Common to All Alternatives***

Paleontological resources would be one of the public resources evaluated when acquisition actions are considered. The acquisition of new land would provide long-term federal protection of any paleontological resources contained therein.

Exchange or disposal of lands to nonfederal entities would permanently remove federal protections for paleontological resources. The reduced level of protection would result in greater potential for vandalism, theft, and destruction of any paleontological resources present. The potential for paleontological resources would be assessed before these activities were authorized.

No specific lands with known paleontological resources have been identified for acquisition or disposition, so there likely would be no impacts on paleontological resources resulting from lands and realty management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from ACEC/RNA Management

The Raised Bog is considered to have potential to have a 10,000-year-old pollen record.

Effects Common to All Alternatives

Surface disturbance could disturb the more recent paleoenvironmental information and could increase erosion, which could result in the loss of older information.

Effects under Alternative A

Under Alternative A, the Raised Bog area is not proposed for ACEC designation. Any protections would continue on a case-by-case basis (see Effects from Minerals Management). The protections under Alternative A are slightly greater than those under Alternative B.

Effects under Alternative B

Under Alternative B, the Raised Bog area is not proposed for ACEC designation. There would be no surface disturbance restrictions. Alternative B is the least restrictive alternative.

Effects under Alternative C

Under Alternative C, the Raised Bog area is proposed for ACEC designation. This would increase the restrictions on surface disturbance activities. Alternatives C and D are equally restrictive.

Effects under Alternative D

Under Alternative D, the Raised Bog area is proposed for ACEC designation. This would increase the restrictions on surface disturbance activities. Alternatives C and D are equally restrictive.

Paleontological Resources: Effects from Backcountry Byways Management**Effects Common to All Alternatives**

There likely would be no impacts on paleontological resources resulting from BCB management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from National Historic Trails Management**Effects Common to All Alternatives**

There likely would be no impacts on paleontological resources resulting from national historic trails management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Wild and Scenic Rivers Management**Effects Common to All Alternatives**

There likely would be no impacts on paleontological resources resulting from WSR management. Any management actions protective of paleontological resources along NWSRS eligible corridors would be implemented according to BMPs, SOPs, as well as the goals, objective, and actions related to other resources.

Paleontological Resources: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management**Effects Common to All Alternatives**

Managing 416,652 acres as WSAs to maintain wilderness characteristics would restrict surface-disturbing activities and would indirectly reduce the potential for direct disturbance of paleontological resources, alterations to setting, and access leading to vandalism and unauthorized collecting. If Congress releases the WSAs and they are not located within a designated ACEC, the risk of impacts on paleontological resources from future surface-disturbing activities and other incompatible uses would increase.

Effects under Alternative A

Effects would be the same as those identified under Effects Common to All Alternatives.

Effects under Alternative B

Effects would be the same as those identified under Effects Common to All Alternatives.

Effects under Alternative C

Effects would be similar to those identified for all alternatives. Managing an additional 240,223 acres to protect wilderness characteristics in eight areas includes closing them to mineral leasing and establishing ROW exclusion zones. Priority habitat would further restrict surface-disturbing activities and would reduce the potential for direct disturbance of paleontological resources. Managing to maintain wilderness characteristics and priority habitat would also reduce the potential for indirect impacts on the setting of paleontological resources and would reduce the potential for impacts due to public access from overuse, vandalism and unauthorized collecting.

Effects under Alternative D

Effects would be the same as those identified under Effects Common to All Alternatives.

Paleontological Resources: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There likely would be no impacts on paleontological resources resulting from watchable wildlife viewing sites management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Public Health and Safety Management

Effects Common to All Alternatives

There likely would be no impacts on paleontological resources resulting from public health and safety management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Effects from Sustainable Development Management

Effects Common to All Alternatives

There likely would be no impacts on paleontological resources resulting from sustainable development management objectives or actions under any of the alternatives. With respect to effects on paleontological resources, all of the alternatives are essentially equivalent.

Paleontological Resources: Cumulative Effects

Past and Present Actions

In the past there have been direct impacts on paleoenvironmental deposits at springs and in other riparian zones from range improvements as well as indirect impacts from concentrated grazing leading to erosion and disturbance of the paleoenvironmental record in these areas. From 1982 to the present, current land use plans have employed management actions to reduce concentrated grazing and have improved conditions based on progressing towards or meeting standards for rangeland health. These actions have reduced impacts on paleoenvironmental resources from livestock grazing.

Minerals, lands and realty, renewable energy, and recreation activities have disturbed soils which may have damaged unknown resources. In recent years, use of the BLM Potential Fossil Yield Classification (PFYC) system to classify paleontological resource potential to assess possible resource impacts and mitigation needs for actions involving surface disturbance have reduced impacts on paleontological resources. Measures to avoid and reduce impacts on paleontological resources include consultation of the PFYC data base, literature searches, inventory, and implementation of mitigation measures to avoid or reduce impacts. Unrestricted OHV travel may have damaged surface paleontological resources through cross country travel and through the creation of new roads or trails. Impacts are difficult to quantify due to dispersed use. Recreational looting and excavation of paleontological sites have removed vertebrate fossils. Although these impacts continue, monitor and patrol by law enforcement and heritage education outreach efforts have helped to reduce these impacts. Impacts which have occurred to paleontological resources in the past from WHB are similar to those from livestock grazing. WHB management actions have reduced concentrations of WHB in riparian zones, thereby reducing impacts on paleoenvironmental resources. Fire control and suppression involve ground-disturbing activities have the potential to impact paleoenvironmental and paleontological resources. Impacts on paleontological resources from fire suppression have been reduced in recent years by BLM fire management personnel working with Resource Advisors to avoid impacts on riparian zones including springs. Few known impacts have occurred from habitat restoration actions.

Reasonably Foreseeable Actions

Impacts would be similar to the past and present actions. Increasing mineral, lands and realty, and renewable energy actions would increase potential for disturbing soils and consequently increasing the potential to damage, destroy, remove, or bury paleontological resources. Paleontological resources would also still be prone to damage based on construction of fuel breaks.

These impacts would be reduced by through consultation of the PFYC data base, literature searches and inventories as well as use restrictions in areas and/or implementing BMPs, SOPs, required mitigation measures and permit stipulations that would include avoidance. Recreation management with respect to OHV travel would include limits of uses which would help protect paleontological resources depending on the number of acres designated as open, limited, or closed by alternative. Habitat restoration and management of priority wildlife habitat and priority watersheds would include use restrictions, reducing disturbance potential.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Incremental cumulative impacts of the past, present and RFFAs coupled with proposed management actions would vary depending on which alternative is selected. Most impacts on paleontological resources from minerals, lands and realty, renewable energy, permitted recreation events and fuels projects in the recent past have been avoided or mitigated in the recent past. This would continue under all alternatives. Management of minerals, renewable energy, and ROW actions to include implementation of BMPs, SOPs, required mitigation measures and permit stipulations would reduce potential impacts through avoidance of areas containing paleontological resources. Some incremental impacts would occur due to looting of paleontological sites associated with increased access to paleontological sites. Incremental impacts from recreation use and OHV travel would be dependent on travel management designations and associated restrictions. Under Alternative A, allowing open OHV use on most of the planning area and designating fewer limited and closed areas than under the other alternatives would result in moderate incremental impacts on paleontological resources from surface disturbance and increased access. Incremental impacts under B would be less, but similar. Incremental impacts under C and D would be low with C having the least incremental impacts. Incremental impacts from livestock grazing would be low under all alternatives with C resulting in the least incremental damage. Management of priority wildlife habitat, priority watersheds, special status species management, and ACECs would protect and reduce the potential of damage to paleontological resources by restricting certain uses depending on the number of acres identified or designated for management, although the potential 10,000 year old pollen record at the Raised Bog could be impacted by locatable minerals if these impacts could not be mitigated or avoided. Incremental impacts from wildfire suppression are anticipated to be reduced.

4.2.15 Visual Resources

Summary

In general, Effects Common to All Alternatives involve actions that maintain or improve the quality of visual resources. In addition to relying on the visual resource contrast rating system to preserve the overall scenic quality of BLM-administered land, specific actions also maintain or improve visual resources involving air, water, flora, fauna, wildland fire, cultural resources, minerals, and recreation.

Alternative A would continue to rely on dated Management Framework Plans to manage visual resources. The plans are silent on certain issues related to geology, wildland fire, cultural resources, and cave and karst resources, all of which involve visual resources. This threatens visual resources associated with these resources. Also, incorrect or inconsistent visual resource management classifications would continue to make managing visual resources difficult and would threaten the quality of visual resources. Furthermore, the demand for recreational use is expected to continue to increase, increasing the value of open spaces and undeveloped landscapes and the need for management actions to protect sensitive visual resource values.

Alternative C would provide the greatest protection to visual resources after Alternative B. Because Alternative C designates the most priority 1 wildlife habitat acres and the greatest total priority 1 and 2 wildlife habitat acres, it would have the greatest impact on protecting visual resources. Alternative C would assign more VRM class designations that are equal to or more protective than the VRI class

designations. Also, Alternative C would close the most acres to OHV use and would have no open areas.

Methods of Analysis

Methods and Assumptions

Potential impacts on visual resources from each alternative are based on interdisciplinary team knowledge of the resources and the WD planning area, review of literature, and information gathered from the public during the planning process. To the extent practical, spatial data was used to compare the proposed management of each alternative to the objectives for VRM classes. Various actions that might create changes to the basic landscape elements (form, line, color, and texture) were considered in identifying potential impacts. Effects are quantified where possible. In absence of quantitative data, best professional judgment was used. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were assessed according to the following assumptions:

- Scenic resources would remain in demand within the WD over the life of the RMP;
- The demand for recreational use would continue to increase over the life of the RMP, increasing the value of open spaces and undeveloped landscapes and the need for management actions to protect sensitive visual resource values;
- All laws for the management and protection of visual resources would be followed, to the extent allowed by the budget and available personnel;
- Any new surface-disturbing activities proposed would be subject to NEPA analysis, which would include a VRM contrast rating;
- Activities proposed that would not initially meet VRM objectives for the area would be mitigated to the extent needed to meet the objectives. Those activities proposed that could not be mitigated would not be authorized;
- Incorrect or inconsistent visual resource management classifications would continue to make managing visual resources difficult and threaten the quality of visual resources;
- Some proactive restoration of areas that do not meet desired visual resource objectives may be completed each year; and
- Conflicts in the rural and urban interface will increase as rural subdivision development increases.

Visual Resources: Effects from Air Quality Management

Effects Common to All Alternatives

The BLM would minimize degradation of the airshed by managing wildland fire, while meeting federal and state air quality and opacity standards. This would continue to promote visually clear skies over BLM-managed lands. There would be no new impacts.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects under Alternative B

The impacts would be the same as those under Alternative A.

Effects under Alternative C

The impacts would be the same as those under Alternative A.

Effects under Alternative D

The impacts would be the same as those under Alternative A.

Visual Resources: Effects from Geology Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from geologic resource management.

Effects under Alternative A

Alternative A does not address unique geologic resources. Therefore, there would continue to be no requirements for the BLM to protect unique geologic resources and, as a result, the visual resources associated with the unique geologic resources. This could result in activities, such as mining, which lead to the deterioration of visual resources associated with the unique geologic resources. There would be no new impacts.

Effects under Alternative B

The BLM would identify areas of unique geologic interest. Six unique geologic resources are specifically identified and would remain open for all methods of mineral disposal subject to implementation of permit stipulations or mitigation measures to reduce undue adverse impacts. Although permit stipulations or mitigation measures would reduce undue adverse impacts, the potential for adverse impacts would not necessarily be entirely eliminated. As a result, the natural landscape could be altered in a way that could directly or indirectly diminish the aesthetics of the unique geologic resources and the surrounding landscape.

Effects under Alternative C

The BLM would identify areas of unique geologic interest. Nine unique geologic resources are specifically identified. The BLM would designate areas containing unique geologic resources as exclusion zones for ROWs and other discretionary actions and would close these areas to saleable mineral disposal. Leasable minerals within unique geologic areas would be available with an NSO stipulation. The BLM would pursue withdrawal from the operation of the General Mining Law of areas containing unique geologic resources. As a result, the aesthetics of the unique geologic resources and the surrounding landscape would be protected.

Effects under Alternative D

Developing mitigation measures and permit stipulations to protect unique geologic resource while allowing for multiples uses would result in few impacts on VRM. Protecting geologic resources would maintain the character of landscape settings. Impacts on VRM would vary based on the designation of the VRM management class and additional requirements to mitigate impacts on the visual setting.

Visual Resources: Visual Resources: Effects from Soil Resources Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that would likely affect aesthetics and visual resources on BLM-administered land.

Visual Resources: Effects from Water Resources Management

Effects Common to All Alternatives

The BLM would continue to protect and maintain watersheds so that they appropriately capture, retain, and release water of quality that meets or exceeds state and federal standards. This would promote clean water in, for example, streams, resulting in visually clear aquatic landscapes. There would be no new impacts.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects under Alternative B

Large scale water importation/exportation projects may result in large scale aqueducts or pipelines.

Effects under Alternative C

Effects from water importation/exportation projects would be more fully mitigated and would have lesser impacts than under Alternative B.

Effects under Alternative D

Effects from water importation/exportation projects would be more fully mitigated and would have lesser impacts than under Alternative B.

Visual Resources: Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

Construction of fuelbreaks, and thinning would affect view sheds. These impacts would be low depending on VRM class objectives, implementation of mitigation measures, and SOPs.

Visual Resources: Effects from Vegetation—Invasive and Noxious Species Management***Effects Common to All Alternatives***

The BLM would continue to minimize the spread of weeds so that native vegetation could thrive. This would promote a visual landscape with flora that is typical of the Great Basin. There would be no new impacts. Herbicide treatments may change line, color, or form on the landscape. The impacts would be short term until native species re-establish.

Effects under Alternative A

There would be no alternative-specific impacts because there are no actions that affect aesthetics and visual resources on BLM-administered land.

Effects under Alternative B

The impacts would be the same as those under Alternative A.

Effects under Alternative C

The impacts would be the same as those under Alternative A.

Effects under Alternative D

The impacts would be the same as those under Alternative A.

Visual Resources: Effects from Chemical and Biological Control***Effects Common to All Alternatives***

There would be no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Visual Resources: Effects from Vegetation—Rangeland Management***Effects Common to All Alternatives***

There would be no effects common to all alternatives from vegetation-rangeland management.

Effects under Alternative A

Alternative A does not address the type of seeds to be used for rehabilitation and reclamation, but the assumption is that both native and introduced seeds would be used. By using introduced seeds for rehabilitation and reclamation, the land being rehabilitated or reclaimed would gain the benefit of being vegetated.

Effects under Alternative B

The BLM would use crested wheatgrass, forage kochia, or other noninvasive introduced seeds for rehabilitation and reclamation. By using noninvasive introduced seeds for rehabilitation and reclamation, the land being rehabilitated or reclaimed would gain the benefit of being vegetated;

however, it would be vegetated with plants that may contrast with the area's native flora. These impacts would be short term and would diminish over time as native species re-establish.

Effects under Alternative C

When possible, the BLM would use local native seed collections for rehabilitation and reclamation. Priority for use of seeds and plant materials is to use locally collected native seed first, then use native seeds. By using native seed for rehabilitation and reclamation, the land being rehabilitated or reclaimed would gain the benefit of being vegetated with plants that are similar to an area's native flora. This would have a greater impact on the visual environment than under Alternatives A and B. There would be minimal impact to VRM once areas re-vegetate.

In areas that demonstrate a reasonable chance of success, the BLM would restore, protect, and improve degraded rangelands by initiating land treatments. The BLM would use management tools, such as vegetation manipulation (mechanical and biological treatments), fencing, and use restrictions. It would allow natural recovery due to the presence of surviving perennial plants or a sufficient seed source. Because the BLM would allow for natural recovery, the assumption is that recovery would rely on native, and not introduced, plants. This would create fewer VRM impacts on the setting than under Alternatives A and B.

Effects under Alternative D

When available, local native seed collections would be used for rehabilitation and reclamation. Priority for use of seeds and plant materials is as follows: first, locally collected native seed; second, native seeds; then third, introduced seed. By using native seed for rehabilitation and reclamation, the land being rehabilitated or reclaimed would gain the benefit of being vegetated with plants that are similar to an area's native flora. By using introduced seed for rehabilitation and reclamation, the land being rehabilitated or reclaimed would gain the benefit of being vegetated; however, it would be vegetated with plants that may contrast with the area's native flora. These impacts would be short term and would diminish over time.

Visual Resources: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Visual Resources: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

The BLM would continue to apply land health standards, SOPs, BMPs, use restrictions, or mitigation measures to all BLM and BLM-authorized activities to maintain and improve wildlife habitat. This would promote a visual landscape with flora and fauna that is typical of the Great Basin. There would be no new impacts.

Effects under Alternative A

The BLM would continue to not designate priority wildlife habitat areas. There would be no new impacts on visual resources.

Effects under Alternative B

The BLM would designate no acres as priority 1 wildlife habitat areas and 716,528 acres as priority 2 (Table 4-11). This would limit certain types of activities to protect habitat. In turn, it would preserve the naturalness of the areas, thereby protecting visual resources. Most of the avoidance areas would be in VRI Class III areas.

Table 4-11
VRI Classes for Land Designations—Alternative B

Land Designation	VRI Class I Area (acres)	VRI Class II Area (acres)	VRI Class III Area (acres)	VRI Class IV Area (acres)
Priority 1 Wildlife Habitat	0	0	0	0
Priority 2 Wildlife Habitat	67,964	53,231	594,598	0

Source: GIS calculations of BLM (2011) Data

Effects under Alternative C

The BLM would designate 1,279,481 acres as priority 1 wildlife habitat areas and 869,645 acres as priority 2 (Table 4-12). This would limit certain types of activities to protect habitat. In turn, it would preserve the naturalness of the areas, thereby protecting visual resources. Most of the avoidance and exclusion areas would be in VRI Class II areas. Because Alternative C designates the most priority 1 wildlife habitat acres and the greatest total priority 1 and 2 wildlife habitat acres, it would have the greatest impact on protecting visual resources.

Table 4-12
VRI Classes for Land Designations—Alternative C

Land Designation	VRI Class I Area (acres)	VRI Class II Area (acres)	VRI Class III Area (acres)	VRI Class IV Area (acres)
Priority 1 Wildlife Habitat	103,443	1,069,247	69,737	28,631
Priority 2 Wildlife Habitat	59,358	752,593	892	49,148

Source: Source: GIS calculations of BLM (2011) Data

Effects under Alternative D

The BLM would designate 1,199,539 acres as priority wildlife habitat areas (Table 4-13). This would limit certain types of activities to protect habitat. In turn, it would preserve the naturalness of the areas, thereby protecting visual resources.

Table 4-13
VRI Classes for Land Designations—Alternative D

Land Designation	VRI Class I Area (acres)	VRI Class II Area (acres)	VRI Class III Area (acres)	VRI Class IV Area (acres)
Priority Wildlife Habitat	12	1,088,514	104,116	5,140

Source: GIS calculations of BLM (2011) Data

Visual Resources: Effects from Special Status Species Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from special status species management.

Effects under Alternative A

Alternative A would continue to protect sensitive plant species and the habitat of sensitive animals. This would continue to promote a visual landscape with flora and fauna that is typical of the Great Basin. There would be no new impacts.

Effects under Alternative B

Alternative B would implement additional actions that protect sensitive plant species and the habitat of sensitive animals. This would increase the protection of a visual landscape with flora and fauna that is typical of the Great Basin.

Effects under Alternative C

The impacts on visual resources from special status species management would be similar to those under Alternative B.

Effects under Alternative D

The impacts on visual resources from special status species management would be similar to those under Alternative B.

Visual Resources: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Visual Resources: Effects from Wildland Fire Management

Effects Common to All Alternatives

Wildland fire would affect VRM as color, line, shape, and form would change on the landscape and would vary based on the size of the fire. Impacts would reduce over time as areas re-vegetate. Emergency Stabilization and Rehabilitation efforts combined with weed control would speed up

recovery of burned areas, reducing the timeframe that view sheds would be impacted. Construction of strategically placed fuelbreaks would impact line, color and form in view sheds. Implementation of SOPs and placement of fuelbreaks within previously disturbed areas, following contour, and creating mosaic treatment patterns would minimize impacts.

Effects under Alternative A

Alternative A does not identify areas for allowing conditional fire suppression management for a benefit. There would continue to be no requirements for the BLM to use wildland fire to provide resource benefits. Consequently, the impacts on visual resources identified under Alternatives B and D would not occur. There would be no new impacts.

Effects under Alternative B

The BLM would designate 110,167 acres as conditional fire suppression areas where fire may be used to provide resource benefits (Table 4-14). The assumption is that using wildland fire to provide resource benefits would promote healthy habitat native to the Great Basin. Consequently, allowing conditional fire suppression management for a benefit would promote a visual landscape with flora that is typical of the Great Basin. However, after an area had been burned, there would be short-term impacts on visual resources, including scorched terrain and vegetation, until native vegetation recolonized burned areas. Most of the fire use would occur in VRI Class IV areas.

Table 4-14
VRI Classes for Fire Use—Alternatives B and D

Land Designation	VRI Class I Area (acres)	VRI Class II Area (acres)	VRI Class III Area (acres)	VRI Class IV Area (acres)
Fire Use	37,190	3,471	3,854	65,652

Source: GIS calculations of BLM (2007e) Data

Effects under Alternative C

The impacts on visual resources from wildland fire management would be the same as those under Alternative A.

Effects under Alternative D

Impacts would be the same as those described under Alternative B.

Visual Resources: Effects from Cultural Resources Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from cultural resources management.

Effects under Alternative A

Alternative A does not specify a VRM class for the viewshed of the Lovelock Cave BCB. As a result, activities could occur in the viewshed that could alter the scenic landscape along the Lovelock Cave BCB.

The BLM would mitigate potential adverse effects on historic landscapes associated with eligible, unevaluated, or high potential CNHT segments by adhering to a VRM Class II objective within six miles of the trail centerline or to the visual horizon within the six-mile zone. Maintaining a VRM Class II objective within six miles of CNHT centerline or to the visual horizon within the six-mile zone would continue to provide the highest objective among the alternatives for protecting the visual setting of the trail. However, due to the need to address incorrect or inconsistent VRM classifications, managing visual resources to a VRM Class II objective for all segments of the CNHT would continue to be problematic. For example, due to the proximity of the CNHT segments to I-80 and utility corridors, it is unlikely VRM Class II objectives could be met.

Effects under Alternative B

The BLM would protect the viewshed of the Lovelock Cave BCB by managing the viewshed to VRM III. As a result, there would be greater protection of the scenic landscape along the Lovelock Cave BCB because there are currently no standards against which to manage the scenic landscape. Actions that occur in the viewshed would be required to partially retain the landscape character. Adding a VRM Class III objective to the Lovelock Cave BCB and Lovelock Cave would increase protection from current levels, but would still allow moderate change that could reduce the integrity of the visual setting.

The BLM would protect historic landscapes associated with the CNHT by adhering to a VRM III objective within six miles of the centerline or to the visual horizon within the six-mile zone, except along the I-80 corridor and within the utility corridors, which would be managed to VRM IV. This action would provide a more attainable set of standards for managing visual resources where segments of the CNHT are near I-80. Reducing the current objective for the CNHT trail to VRM Class III overall and Class IV along I-80 and the utility corridor would allow additional intrusion on the view shed of the historic trail.

Effects under Alternative C

The BLM would protect the viewshed of the Lovelock Cave BCB by managing the viewshed to VRM II. As a result, there would be greater protection of the scenic landscape along the Lovelock Cave BCB because there are currently no standards against which to manage activities that alter the scenic landscape. Actions that occur in the viewshed would be required to retain the landscape character, which is a higher standard than partially retaining the landscape character.

The impacts on visual resources with respect to the CNHT would be the same as those under Alternative A.

Retaining the current VRM Class II objective for the CNHT, adding a VRM Class II objective to the Lovelock Cave BCB, and removing sensitive trail viewsheds from consideration for disposal, would provide the highest objectives among the alternatives for protecting the visual setting of the CNHT and Lovelock Cave Byway.

Effects under Alternative D

The impacts on visual resources with respect to the Lovelock Cave BCB would be the same as those under Alternative C.

Historic landscapes along CNHT would be managed to VRM Class II, Class III, and Class IV objectives. The BLM would protect historic landscapes associated with the CNHT by adhering to a VRM Class II objective within six miles of the trail centerline or to the visual horizon within the six-mile zone, except along the I-80 corridor and within the utility corridor at the southern edge of the Black Rock Desert. The portion of the trail viewshed that falls within the Black Rock Desert utility corridor would be managed to VRM III. Within the I-80 corridor, the trail viewshed would be managed to VRM III within six miles of the trail centerline or to the visual horizon within the six-mile zone, except for the power line corridor and sensitive areas of the trail viewshed. Sensitive areas would be managed to VRM II one mile on either side of the centerline of the trail. The I-80 trail viewshed in this power line corridor would be managed to VRM IV. This action would provide a more attainable set of standards for managing visual resources where segments of the CNHT are near both I-80 and utility corridors. Effects on the CNHT would be similar to Alternative C. While a reduction from current objectives, this action would allow the BLM to assess impacts on the visual setting of trail resources based on the existing character of the landscape.

Visual Resources: Effects from Tribal Consultation

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Visual Resources: Effects from Paleontological Resources Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Visual Resources: Effects from Visual Resources Management

Effects Common to All Alternatives

The BLM would continue to use the visual resource contrast rating system during project-level planning to determine whether or not proposed activities would meet VRM objectives. Mitigation measures would be identified to reduce visual contrasts, and rehabilitation plans would be prepared to address landscape modifications on a case-by-case basis. Also, the BLM would continue to manage National Historic Trails according to its policy and guidance by protecting scenic landscapes and historic settings. Furthermore, WSAs would continue to be managed as VRM Class I. As a result, visual resources during specific projects, near NHTs, and in WSAs would continue to be preserved. There would be no new impacts.

Effects under Alternative A

The 2009 VRI classes are listed in Table 4-15 and are compared to existing VRM classes designated in the Paradise-Denio and Sonoma-Gerlach Management Framework plans. Under Alternative A, designated VRM classes would differ from the visual resource inventory values representing more area managed in VRM Class III and IV as compared to VRI Class III and IV. The potential for impact under the VRM Class designations would not change.

Table 4-15
Comparison of Existing VRM Classes with VRI Classes—Alternative A

VRM Class Designations - Alternative A	VRM Class Designations Area (Acres)	VRI Classes (2009 Inventory)	VRI Inventory Area (Acres)	Difference in Area (Acres)
VRM I	420,271	VRI Class I	416,652	3,619
VRM II	346,302	VRI Class II	273,642	72,660
VRM III	678,883	VRI Class III	1,517,278	838,395
VRM IV	5,667,437	VRI Class IV	4,999,372	668,065
Total	7,112,893		7,206,944	

Source: BLM (2009a) and management actions as described in Chapter 2

Effects under Alternative B

Under Alternative B, the potential impact under the VRM Class designations would increase the area managed under VRM Class II by 44,901 acres and VRM Class III would increase by 1,624,050 acres as compared to Alternative A (Table 4-16). More protection would be afforded in managing the visual integrity of landscapes.

Table 4-16
Comparison of VRM Classes with VRI Classes—Alternative B

VRM Class Designations - Alternative B	VRM Class Designations Area (Acres)	VRI Classes (2009 Inventory)	VRI Inventory Area (Acres)	Difference in Area (Acres)
VRM I	417,605	VRI Class I	416,652	953
VRM II	391,203	VRI Class II	273,642	117,561
VRM III	2,302,933	VRI Class III	1,517,278	785,655
VRM IV	4,107,965	VRI Class IV	4,999,372	891,407
Total	7,219,706		7,206,944	

Source: BLM (2009a) and management actions as described in Chapter 2

Effects under Alternative C

Managing the visual integrity of the landscapes to a greater degree than the visual inventory value is driven by other resource values attributed to these areas (e.g., protection of the visual integrity of the historic settings where visual integrity contributes so the significance of the historic designation). Compared to Alternative B, Alternative C VRM Class designations would increase significantly the area managed under VRM Class II by 2,692,008 acre (Table 4-17). VRM Class III area would increase by 1,624,050. VRM Class IV area would be reduced by 3,196,963 acres. More protection would be afforded in managing the visual integrity of landscapes as compared to Alternative B.

Table 4-17
Comparison of VRM Classes with VRI Classes—Alternative C

VRM Class Designations - Alternative C	VRM Class Designations Area (Acres)	VRI Classes (2009 Inventory)	VRI Inventory Area (Acres)	Difference in Area (Acres)
VRM I	417,605	VRI Class I	416,652	953
VRM II	3,083,211	VRI Class II	273,642	2,809,569

Table 4-17
Comparison of VRM Classes with VRI Classes—Alternative C

VRM Class Designations - Alternative C	VRM Class Designations Area (Acres)	VRI Classes (2009 Inventory)	VRI Inventory Area (Acres)	Difference in Area (Acres)
VRM III	2,807,858	VRI Class III	1,517,278	1,290,580
VRM IV	911,002	VRI Class IV	4,999,372	4,088,370
Total	7,219,676		7,206,944	

Source: BLM (2009a) and management actions as described in Chapter 2

Table 4-18
Comparison of VRM Classes with VRI Classes—Alternative D

VRM Class Designations - Alternative C	VRM Class Designations Area (Acres)	VRI Classes (2009 Inventory)	VRI Inventory Area (Acres)	Difference in Area (Acres)
VRM I	417,605	VRI Class I	416,652	953
VRM II	2,780,416	VRI Class II	273,642	2,506,774
VRM III	3,073,906	VRI Class III	1,517,278	1,556,628
VRM IV	961,505	VRI Class IV	4,999,372	4,037,867
Total	7,233,431		7,206,944	

Source: BLM (2009a) and management actions as described in Chapter 2

Visual Resources: Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from cave and karst resources.

Effects under Alternative A

Alternative A does not address unique geologic resources. Therefore, there would continue to be no requirements for the BLM to protect unique geologic resources and, as a result, the visual resources associated with the unique geologic resources. This could result in activities, such as recreation, which lead to the deterioration of visual resources associated with cave and karst resources. There would be no new impacts.

Effects under Alternative B

The BLM would implement appropriate mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and signing to protect unique geologic features and wildlife habitat. As a result, the aesthetics of the unique geologic resources and the surrounding landscape would be protected.

Effects under Alternative C

Unlike Alternatives B and D, the BLM would not implement mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and signing to protect unique geologic features and wildlife habitat. Alternative C would also be different in that the BLM would not identify undiscovered sites or promote increased visitation. As a result, there is a greater chance for the aesthetics of unique

geologic resources in known caves and karsts to be altered than the aesthetics of unique geologic resources in lesser known caves and karsts.

Effects under Alternative D

The impacts on visual resources with respect to unique geologic resources would be the same as those under Alternative B.

Visual Resources: Effects from Livestock Grazing Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Visual Resources: Effects from Minerals Management

Effects Common to All Alternatives

RFDs

Future actions based on reasonable development could result in indirect impacts. Future exploration and development could involve new structures, roads, and operations, which could be in areas where people live and work, where frequent recreation occurs, where expansive vistas are available, where minimal nearby development exists, or where little human-made light is present. There would be a potential for impacts that alter the natural aesthetics of an area and nighttime light. General stipulations for resource development would reduce potential impacts. Applying operating stipulations and performing successful reclamation may mitigate many impacts. The assumption is that changes to the natural aesthetics of an area and nighttime light would be consistent with the area's VRM classification.

Effects under Alternative A

Effects from minerals (saleable, fluid, solid, and locatable) management actions are described below. Actions that decrease the amount of land open to minerals management actions would result in fewer visual resources being altered by minerals management activity and structures. Actions that increase the amount of land open to minerals management actions would result in more visual resources being altered by minerals management activity and structures. Visual resources would be altered by the presence of, for example, nighttime light, roads, vegetation loss, and loss of open space. Minerals management actions would be required to comply with designated VRM classes.

Saleable

VRI Class designations are listed under Table 4-19 for BLM-administered land that is open for mineral material (saleable) actions. There would be no change to the amount of BLM-administered land designated as open with standard stipulations for mineral material (saleable) actions. Impacts on visual resources would not change.

Table 4-19
VRI Classes for Land Open for Mineral Material (Saleable) Actions—Alternative A

VRI Class	Acres of Land Open for Mineral Material (Saleable) Actions (Standard Stipulations)
I	58
II	266,945
III	1,510,730
IV	4,997,821

Source: BLM (2009a) and management actions as described in Chapter 2

Fluid

VRI Class designations are listed under Table 4-20 for BLM-administered land that is open for fluid mineral actions. There would be no change to the amount of BLM-administered land designated as open with standard stipulations for fluid mineral actions. Impacts on visual resources would not change.

Table 4-20
VRI Classes for Land Open for Fluid Mineral Actions—Alternative A

VRI Class	Acres of Land Open for Fluid Mineral Actions (Standard Stipulations)
I	58
II	265,384
III	1,502,131
IV	4,948,711

Source: BLM (2009a) and management actions as described in Chapter 2

Solid

VRI Class designations are listed under Table 4-21 for BLM-administered land that is open for solid leasable mineral actions. There would be no change to the amount of BLM-administered land designated as open with standard stipulations for solid leasable mineral actions. Impacts on visual resources would not change.

Table 4-21
VRI Classes for Land Open for Solid Leasable Mineral Actions—Alternative A

VRI Class	Acres of Land Open for Solid Leasable Mineral Actions (Standard Stipulations)
I	58
II	266,945
III	1,511,307
IV	4,997,876

Source: BLM (2009a) and management actions as described in Chapter 2

Locatable

VRI Class designations are listed under Table 4-22 for BLM-administered land that is open for locatable mineral actions. There would be no change to the amount of BLM-administered land designated as open with standard stipulations for locatable mineral actions. Impacts on visual resources would not change.

Table 4-22
VRI Classes for Land Open for Locatable Mineral Actions—Alternative A

VRI Class	Acres of Land Open for Locatable Mineral Actions (Standard Stipulations)
I	413,589
II	266,943
III	1,510,613
IV	5,123,574

Source: BLM (2009a) and management actions as described in Chapter 2

Effects under Alternative B***Saleable***

VRI Class designations are listed under Table 4-23 for BLM-administered land that is open for mineral material (saleable) actions.

Noteworthy changes would occur for VRI Classes II-IV. Alternative B would reduce the amount of VRI Class II-IV land open for mineral material (saleable) actions.

Table 4-23
VRI Classes for Land Open for Mineral Material (Saleable) Actions—Alternative B

VRI Class	Acres of Land Open for Mineral Material (Saleable) Actions (Government Use)	Acres of Land Open for Mineral Material (Saleable) Actions (Special Stipulations)
I	58	0.008
II	56,261	39,333
III	161,303	325,120
IV	649,490	1,080,791

Source: BLM (2009a) and management actions as described in Chapter 2

Fluid

VRI Class designations are listed under Table 4-24 for BLM-administered land that is open for fluid mineral actions.

Table 4-24
VRI Classes for Land Open for Fluid Mineral Actions—Alternative B

VRI Class	Acres of Land Open for Fluid Mineral Actions (Standard Stipulations)	Acres of Land Open for Fluid Mineral Actions (Special Stipulations)
I	0.004	0.004
II	177,578	85,951
III	1028182	354,764
IV	3,267,053	1,080,791

Source: BLM (2009a) and management actions as described in Chapter 2

Noteworthy changes would occur for VRI Classes I-IV. Alternative B would reduce the amount of VRI Classes I-IV land that is open for fluid mineral actions.

Solid

VRI Class designations are listed under Table 4-25 for BLM-administered land that is open for solid leasable mineral actions.

Noteworthy changes would occur for VRI Classes I-IV. Alternative B would decrease the amount of VRI Class I-IV land that is open for solid leasable mineral actions

Table 4-25
VRI Classes for Land Open for Solid Leasable Mineral Actions—Alternative B

VRI Class	Acres of Land Open for Solid Leasable Mineral Actions (Standard Stipulations)	Acres of Land Open for Solid Leasable Mineral Actions (Special Stipulations)
I	0.004	0.008
II	177,578	27,446
III	1,028,191	265,668
IV	3,267,179	1,080,791

Source: BLM (2009a) and management actions as described in Chapter 2

Locatable

VRI Class designations are listed under Table 4-26 for BLM-administered land that is open for locatable mineral actions.

Noteworthy changes would occur for VRI Classes I-IV. Alternative B would increase the amount of VRI Classes I-IV land that is open for locatable mineral actions.

Table 4-26
VRI Classes for Land Open for Locatable Mineral Actions—Alternative B

VRI Class	Acres of Land Open for Locatable Mineral Actions (Standard Stipulations)	Acres of Land Open for Locatable Mineral Actions (Special Stipulations)
I	0.002	413,637
II	78,382	195,122
III	751,598	764,482
IV	2,068,428	3,055,193

Source: BLM (2009a) and management actions as described in Chapter 2

Effects under Alternative C

Saleable

VRI Class designations are listed under Table 4-27 for BLM-administered land that is open for mineral material (saleable) actions.

Noteworthy changes would occur for VRM Classes II-IV. Alternative C would decrease the amount of VRI Classes II-IV land open for mineral material (saleable) actions.

Table 4-27
VRI Classes for Land Open for Mineral Material (Saleable) Actions—Alternative C

VRI Class	Acres of Land Open for Mineral Material (Saleable) Actions (Standard Stipulations)	Acres of Land Open for Mineral Material (Saleable) Actions (Government Use)
I	0.006	58
II	65594	201,136
III	715,582	726,221
IV	1,965,491	2,693,694

Source: BLM (2009a) and management actions as described in Chapter 2

Fluid

VRI Class designations are listed under Table 4-28 for BLM-administered land that is open for fluid mineral actions. Noteworthy changes would occur for VRM Classes I-IV. Alternative C would decrease the amount of VRI Classes I-IV land open for fluid mineral actions.

Solid

VRI Class designations are listed under Table 4-29 for BLM-administered land that is open for solid leasable mineral actions.

Noteworthy changes would occur for VRM Classes I-IV. Alternative C would decrease the amount of VRI Classes I-IV land open for solid leasable mineral actions.

Table 4-28
VRI Classes for Land Open for Fluid Mineral Actions—Alternative C

VRI Class	Acres of Land Open for Fluid Mineral Actions (Standard Stipulations)
I	0.006
II	65,594
III	716,894
IV	1,967,321

Source: BLM (2009a) and management actions as described in Chapter 2

Table 4-29
VRI Classes for Land Open for Solid Leasable Mineral Actions—Alternative C

VRI Class	Acres of Land Open for Solid Leasable Mineral Actions (Standard Stipulations)
I	0.006
II	65,594
III	716,764
IV	1,966,837

Source: BLM (2009a) and management actions as described in Chapter 2

Locatable

VRI Class designations are listed under Table 4-30 for BLM-administered land that is open for locatable mineral actions. Noteworthy changes would occur for VRI Classes I-IV. Alternative C would decrease the amount of VRI Classes I-IV land open for locatable mineral actions.

Table 4-30
VRI Classes for Land Open for Locatable Mineral Actions—Alternative C

VRI Class	Acres of Land Open for Locatable Mineral Actions (Standard Stipulations)	Acres of Land Open for Locatable Mineral Actions (Special Stipulations)
I	0.014	390,596
II	122,331	86,108
III	809,424	588,407
IV	2,483,568	2,570,050

Source: BLM (2009a) and management actions as described in Chapter 2

*Effects under Alternative D****Saleable***

VRM Class designations are listed under Table 4-31 for BLM-administered land that is open for mineral material (saleable) actions. Noteworthy changes would occur for VRI Classes II-IV. Alternative D would decrease the amount of VRI Classes II-IV land open for mineral material (saleable) actions.

Table 4-31
VRM Classes for Land Open for Mineral Material (Saleable) Actions—Alternative D

VRI Class	Acres of Land Open for Mineral Material (Saleable) Actions (Standard Stipulations)	Acres of Land Open for Mineral Material (Saleable) Actions (Government Use)	Acres of Land Open for Mineral Material (Saleable) Actions (Special Stipulations)
I	0.021	58	0.004
II	119,605	83,120	62,425
III	758,092	390,618	280,236
IV	2,610,014	1,297,148	859,875

Source: BLM (2009a) and management actions as described in Chapter 2

Fluid

VRM Class designations are listed under Table 4-32 for BLM-administered land that is open for fluid mineral actions.

Table 4-32
VRM Classes for Land Open for Fluid Mineral Actions—Alternative D

VRI Class	Acres of Land Open for Fluid Mineral Actions (Standard Stipulations)	Acres of Land Open for Fluid Mineral Actions (Special Stipulations)
I	0.004	0.008
II	143,168	59,567
III	890,945	354,888
IV	2,973,914	1,245,079

Source: BLM (2009a) and management actions as described in Chapter 2

Noteworthy changes would occur for VRI Classes I-IV. Alternative D would decrease the amount of VRI Classes I-IV land open for fluid mineral actions.

Solid

VRM Class designations are listed under Table 4-33 for BLM-administered land that is open for solid leasable mineral actions. Noteworthy changes would occur for VRI Classes I-IV. Alternative D would decrease the amount of VRI Classes I-IV land open for solid leasable mineral actions.

Table 4-33
VRI Classes for Land Open for Solid Leasable Mineral Actions—Alternative D

VRI Class	Acres of Land Open for Solid Leasable Mineral Actions (Standard Stipulations)	Acres of Land Open for Solid Leasable Mineral Actions (Special Stipulations)
I	0.004	0.008
II	143,169	59,594
III	890,842	354,732
IV	2,973,914	1,245,079

Source: BLM (2009a) and management actions as described in Chapter 2

Locatable

VRI Class designations are listed under Table 4-34 for BLM-administered land that is open for locatable mineral actions. Noteworthy changes would occur for VRI Classes I, III, and IV. Alternative D would decrease the amount of VRI Class I, III and IV land open for locatable mineral actions.

Table 4-34
VRI Classes for Land Open for Locatable Mineral Actions—Alternative D

VRI Class	Acres of Land Open for Locatable Mineral Actions (Standard Stipulations)	Acres of Land Open for Locatable Mineral Actions (Special Stipulations)
I	0.004	412,677
II	154,232	119,275
III	921,597	587,695
IV	3,073,052	1,919,819

Source: BLM (2009a) and management actions as described in Chapter 2

Visual Resources: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

The BLM would continue to construct appropriate new facilities in such a way as to be unobtrusive with local landscape settings. This would allow the public to use facilities during recreation that blend in with the surrounding landscape. There would be no new impacts.

The BLM would continue to avoid the duplication of roads that have common destinations. As a result, the proliferation of roads, which alter natural aesthetics, would be minimized. There would be no new impacts.

Effects under Alternative A

The BLM would continue to manage OHV designations according to Table 4-35.

Table 4-35
VRI Classes for OHV Use—Alternative A

Land Designation	VRI Class I Area (acres)	VRI Class II Area (acres)	VRI Class III Area (acres)	VRI Class IV Area (acres)
Open	58	262,374	1,510,542	4,995,539
Limited	416,604	25	183	128,540
Closed	17,138	4,555	440	2,701

Source: BLM (2009a) and management actions as described in Chapter 2

There would be no change in the designation of BLM-administered land for OHV use and, therefore, there would be no new impacts on visual resources. Ongoing impacts, such as OHV use in visually sensitive areas, would continue. Continued use of OHVs in visually sensitive areas could cause visual resources to deteriorate by, for example, scarring the terrain and disturbing vegetation. There would be no new impacts.

Effects under Alternative B

The BLM would manage OHV designations according to Table 4-36.

Table 4-36
VRI Classes for OHV Use—Alternative B

Land Designation	VRI Class I Area (acres)	VRI Class II Area (acres)	VRI Class III Area (acres)	VRI Class IV Area (acres)
Open	0	4,666	158,468	1,295,571
Limited	1,265,74	264,094	1,354,801	3,699,611
Closed	17,138	4,555	440	2,701

Source: BLM (2009a) and management actions as described in Chapter 2

Alternative B would decrease the number of acres designated as open in VRI Classes I-IV. As a result, disturbances to the visual environment from motorized vehicles would likely decrease in these areas. Also, Alternative B would increase the number of acres designated as limited in VRI Classes II-IV. Consequently, disturbances to the visual environment from motorized vehicles would likely increase in these areas.

Effects under Alternative C

The BLM would manage OHV designations according to Table 4-37.

Table 4-37
VRI Classes for OHV Use—Alternative C

Land Designation	VRI Class I Area (acres)	VRI Class II Area (acres)	VRI Class III Area (acres)	VRI Class IV Area (acres)
Open	0	0	0	0
Limited	399,508	268,523	1,511,134	5,092,556
Closed	17,137	412	5,035	34,287

Source: BLM (2009a) and management actions as described in Chapter 2

Alternative C would decrease the number of acres designated as open in VRI Classes I-IV. As a result, disturbances to the visual environment from motorized vehicles would likely decrease in these areas. Also, Alternative C would increase the number of acres designated as limited in VRI Classes II-IV. Consequently, disturbances to the visual environment from motorized vehicles would likely increase in these areas.

Effects under Alternative D

The BLM would manage OHV designations according to Table 4-38.

Table 4-38
VRI Classes for OHV Use—Alternative D

Land Designation	VRI Class I Area (acres)	VRI Class II Area (acres)	VRI Class III Area (acres)	VRI Class IV Area (acres)
Open	0	4,187	70,471	215,273
Limited	399,513	264,334	1,440,825	4,902,466
Closed	17,138	4,968	5,036	8,343

Source: BLM (2009a) and management actions as described in Chapter 2

Alternative D would decrease the number of acres designated as open in VRI Classes I-IV. As a result, disturbances to the visual environment from motorized vehicles would likely decrease in these areas. Also, Alternative D would increase the number of acres designated as limited in VRI Classes II-IV. Consequently, disturbances to the visual environment from motorized vehicles would likely increase in these areas.

Visual Resources: Effects from Renewable Energy Management

Effects Common to All Alternatives

The BLM would continue to process ROWs to wind energy developers for project areas and wind monitor and testing sites. It also would continue to authorize ROWs by applying appropriate BMPs, land use restrictions, stipulations, and mitigation measures. Because these actions are already occurring, there would be no new impacts on visual resources.

Effects under Alternative A

The BLM would continue to lease public lands to wind energy companies for developing wind energy generation facilities and would continue to maintain exclusion areas applicable to wind energy projects within WSAs, ACECs, TCPs, and areas of critical habitat for threatened and endangered and sensitive species. Because these actions are already occurring, there would be no new impacts on visual resources.

Effects under Alternative B

The BLM would designate avoidance areas (716,528 acres) to protect resources. Granting ROWs or leasing public lands for renewable energy projects in avoidance areas would require special stipulation to mitigate any impact on resources. No exclusion zones would be designated. Establishing avoidance areas and requiring special stipulations would limit certain types of activities from altering the landscape, thereby protecting visual resources.

Effects under Alternative C

The BLM would designate avoidance areas (869,645 acres) to protect resources. Granting ROWs or leasing public lands for renewable energy projects in avoidance areas would require special stipulation to mitigate any impact on resources. The BLM would reduce undue adverse environmental impacts by developing lease stipulations and mitigation measures. The BLM would designate 1,279,481 acres as exclusion zones where no overhead transmission lines and ROWs for energy projects would be allowed. These actions would limit certain types of activities from altering the landscape, thereby protecting visual resources. Because Alternative C designates the most exclusion zones and the greatest total exclusion and avoidance zones, it would have the greatest impact on protecting visual resources.

Effects under Alternative D

The BLM would designate avoidance areas (1,773,199 acres) to protect resources. Granting ROWs or leasing public lands for renewable energy projects in avoidance areas would require special stipulation to mitigate any impact to resources. The BLM would designate 1,199,539 acres of exclusion zones where no overhead transmission lines and ROW energy projects would be allowed. These actions would limit certain types of activities from altering the landscape, thereby protecting visual resources.

Visual Resources: Effects from Transportation and Access Management

Effects Common to All Alternatives

The BLM would continue to maintain its system roads in accordance with the BLM Roads Maintenance Manual. This would help keep roads from becoming a noticeable detraction from the visual landscape. Constructing a road can visually disrupt the form, line, color, and general setting of the local environment. There would be no new impacts.

Effects under Alternative A

The BLM would continue to relocate, realign, or redesign current BLM roads to prevent or reduce sedimentation impacts. This would help minimize erosion, thereby minimizing disturbance to the natural landscape.

Alternative A does not have a road and ROW action similar to Alternatives B and C. This would continue to allow road construction that detracts from the integrity and continuity of the visual environment. There would be no new impacts.

Effects under Alternative B

The BLM would conduct a condition survey program to identify roads that are necessary for BLM use and for roads that contribute to resource damage. The BLM would evaluate the roads' usefulness and would upgrade or downgrade functional classification or maintenance level, as appropriate for the need. This would help minimize erosion and the number of roads crisscrossing the landscape, thereby minimizing disturbance to the natural landscape.

The BLM would construct its roads and would require that non-BLM road ROWs be constructed so as to avoid fragmenting land. This would help preserve the integrity of the visual landscape by preventing roads from dividing the landscape.

Effects under Alternative C

The BLM would conduct a condition survey program to identify roads that are necessary for its use and for roads that contribute to resource damage. The BLM would evaluate the roads' usefulness and would upgrade or downgrade functional classification or maintenance level, as appropriate for the need. This would help minimize erosion and the number of roads crisscrossing the landscape, thereby minimizing disturbance to the natural landscape. These impacts would be the same as Alternative B.

The BLM would construct its roads and would require that non-BLM road ROWs be constructed so as to avoid fragmenting land. The BLM would locate roads so as to preserve open space. This would help preserve the integrity and continuity of the visual landscape by preventing roads from dividing the landscape.

Effects under Alternative D

The BLM would conduct a condition survey program to identify roads that are necessary for its use and for roads that contribute to resource damage. The BLM would evaluate the roads' usefulness and would upgrade or downgrade functional classification or maintenance level, as appropriate for the need. This would help minimize erosion and the number of roads crisscrossing the landscape, thereby minimizing disturbance to the natural landscape. These impacts would be the same as Alternative B.

Alternative D does not have a road and ROW action similar to Alternatives B and C. This would continue to allow road construction that detracts from the integrity and continuity of the visual environment. There would be no new impacts.

Visual Resources: Effects from Lands and Realty Management

Effects Common to All Alternatives

Location of ROWs on public lands would affect visual resources through construction or development of power transmission lines, pipelines, roads, power plants, and communication sites. Impacts would vary based on the size and location of disturbance necessary to construct facilities. Addressing land tenure adjustments, once public lands are disposed of, VRM management would cease. Impacts on surrounding lands with VRM classifications and visual settings would vary based on the size and degree of surface disturbance that occurs on disposed lands. No VRM I lands would be suitable for disposal as these lands are identified as wilderness study areas.

Effects under Alternative A

In addition to Effects Common to All Alternatives discussed above, VRM management would be maintained on lands identified for retention, according to acreages on Table 4-39. VRM management would vary based on the number of acres of public lands retained.

Table 4-39
VRI Classes for Land Tenure Adjustments—Alternative A

Land Tenure Adjustment	VRI Class II Area (acres)	VRI Class III Area (acres)	VRI Class IV Area (acres)
Retention (Zones 1 & 2)	236,668	819,592	2,873,559

Source: BLM (2009a) and management actions as described in Chapter 2

Effects under Alternative B

Under Alternative B, fewer public lands would be suitable for disposal and VRM management would change on lands identified for retention according to retention acreages on Table 4-40. More lands retained would be managed to VRM Classes III and IV compared to Alternative A.

Table 4-40
VRI Classes for Land Tenure Adjustments—Alternative B

Land Tenure Adjustment	VRI Class II Area (acres)	VRI Class III Area (acres)	VRI Class IV Area (acres)
Retention	238,529	939,686	3,506,724

Source: BLM (2009a) and management actions as described in Chapter 2

Effects under Alternative C

Under Alternative C, acres to be retained for public lands would be greater than Alternatives A and B. A higher number of retained lands would be managed to VRM Classes III and IV, see Table 4-41.

Table 4-41
VRI Classes for Land Tenure Adjustments—Alternative C

Land Tenure Adjustment	VRI Class II Area (acres)	VRI Class III Area (acres)	VRI Class IV Area (acres)
Retention	259,896	1,143,550	4,194,531

Source: BLM (2009a) and management actions as described in Chapter 2

Effects under Alternative D

Impacts would be similar to those described under Alternative C.

Visual Resources: Effects from ACEC/ RNA Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from ACEC/RNA management.

Effects under Alternative A

The Osgood Mountains ACEC would continue to be designated as VRM Class IV. Impacts on visual resources would not change.

Effects under Alternative B

The Osgood Mountains ACEC would be managed according to VRM Class II objectives, instead of Class IV objectives. The change in management actions for the Osgood Mountains ACEC would provide greater protection of visual resources in this unique area.

Effects under Alternative C

Impacts on visual resources from management of the Osgood Mountains ACEC would be the same as those under Alternative B.

The Pine Forest, Raised Bog, and the Stillwater ACECs would be managed according to VRM Class II objectives. Managing the Pine Forest, Raised Bog, and Stillwater ACECs to meet VRM Class II objectives would increase the protection of visual resources in these unique areas.

Effects under Alternative D

The Osgood Mountains ACEC would be managed according to VRM Class III objectives. The Pine Forest, Raised Bog, and Stillwater ACECs would be managed according to VRM Class II objectives. Impacts on visual resources from management of ACECs would be the same as those under Alternative C.

Visual Resources: Effects from Backcountry Byways Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Visual Resources: Effects from National Historic Trails Management

The impacts on visual resources from national historic trails management actions are discussed under Effects from Cultural Resources Management above.

Visual Resources: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from WSR management.

Effects under Alternatives A

Under this alternative, eligible river corridors would be given protection through continued interim protective management. All three eligible segments were eligible in part due to scenic ORVs. Protective management would be applied to preserve the scenic values that existed when the WSR Inventory was completed. Under Alternative A, Washburn Creek and Crowley Creek are within a Class IV VRM area. To protect the scenic ORVs of these segments, restrictions would be greater in the 8,166 acres of eligible NWSRS corridors than in the areas immediately adjacent. The eligible segment of the North Fork of the Humboldt River falls within a Class I VRM area. Protection of

the scenic ORVs within this eligible corridor would not likely be different than the VRM management in the adjacent areas.

Effects under Alternatives B

There would be no impacts on visual resources resulting from WSR management objectives under Alternative B.

Effects under Alternatives C

Under this alternative, eligible river corridors would be given protection through the development of Comprehensive River Management Plans. All three eligible segments were eligible in part due to scenic ORVs. Protective management would be applied to preserve the scenic values that existed when the WSR Inventory was completed. Under Alternative A, Washburn Creek and Crowley Creek are within a Class II VRM area. To protect the scenic ORVs of these segments, restrictions would be slightly greater in the 8,166 acres of eligible NWSRS corridors than in the areas immediately adjacent. The eligible segment of the North Fork of the Humboldt River falls within a Class I VRM area. Protection of the scenic ORVs within this eligible corridor would not likely be different than the VRM management in the adjacent areas.

Effects under Alternatives D

Under this alternative, there likely would be no impacts on visual resources from WSR management so long as WSA, priority habitat, and priority watershed management, as outlined in the remainder of the RMP, is implemented. In the case that these management actions are not implemented or are removed after implementation, interim protective management measures would be implemented along the 13,583 acres of eligible WSR corridors, which would cause effects identical to those described under Alternative C (Alternatives C and D would designate the same VRM classes in the areas of the eligible corridors) until a new determination of NWSRS suitability is made.

Visual Resources: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from Wilderness Study Areas and Lands with Wilderness Characteristics management.

Effects under Alternative A

There would be no impacts because there are no specific actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects under Alternative B

There would be no impacts because there are no specific actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Effects under Alternative C

The BLM would protect wilderness characteristics with a designation of closed to mineral leasing, ROW exclusion zones, and priority habitat 1 in the following areas:

- Bluewing Mountains (25,651 acres);
- North Sahwave Mountains (45,686 acres);
- Fencemaker Area of the East Range (50,282 acres);
- Portion of Tobin Range, between the China Mountain WSA and the Mount Tobin WSA (33,854 acres));
- Warm Springs (18,149 acres);
- Buckhorn Peak (23,399 acres); and
- Granite Peak (43,202 acres).

This would limit certain types of activities. In turn, it would preserve the naturalness of the areas, thereby protecting visual resources of the natural landscape.

Effects under Alternative D

There would be no impacts because there are no specific actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Visual Resources: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Visual Resources: Effects from Public Health and Safety Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect aesthetics and visual resources on BLM-administered land.

Visual Resources: Effects from Sustainable Development Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from sustainable development management.

Effects under Alternative A

Alternative A does not address sustainable development, so there would continue to be no actions for the BLM to implement involving sustainable development and, as a result, there would be no corresponding changes to visual resources. There would be no new impacts.

Effects under Alternative B

Under Alternative B, surface-disturbing actions would occur. These types of activities would be subject to the analysis stage of the BLM VRM system. The analysis stage involves determining whether the potential visual impacts from proposed surface-disturbing activities or developments would meet the management objectives established for the area, or whether design adjustments would be required. This process is described in BLM Handbook H-8431-1, Visual Resource Contrast Rating. Activities proposed that would not initially meet VRM objectives for an area would be mitigated to the extent needed to meet the VRM objectives. Those activities proposed that could not be mitigated would not be authorized. The BLM would rely on the VRM system to protect the scenery of BLM-administered land.

Effects under Alternative C

The impacts on visual resources would be the same as those under Alternative B.

Effects under Alternative D

The impacts on visual resources would be the same as those under Alternative B.

Visual Resources: Cumulative Effects

Past and Present Actions

Past and present impacts resulting from livestock grazing has gradually increased visual impacts on landscapes overtime due to installation of range improvements, primarily fencing. From 1982 to the present, current land use plan management strategies to achieve visual resource management objectives have limited the degree of impacts on the scenic integrity of landscapes.

Minerals, lands and realty, and renewable energy developments have also impacted visual quality of landscapes based on construction of infrastructure, mine pits, waste dumps and other facilities. Unrestricted OHV use has created new roads and trails that created linear features within landscape settings. Site specific mitigation measures to reduce impacts on landscape settings have been developed to ensure developments meet VRM resource class objectives. No known impacts have occurred to VRM based on special status species and WHB management. Continued large wildfires and subsequent areas dominated with cheatgrass have impacted landscape settings due to changes in color, line, and form.

Reasonably Foreseeable Actions

Impacts would be similar to the past and present actions for livestock grazing. No grazing would have minimal impacts on VRM as range improvements would remain or would be removed in areas on a case by case basis. Activities associated with minerals, lands and realty, and renewable energy developments would increase the number of facilities, roads, and other disturbances that would affect landscape settings. These impacts would be reduced based on implementation of BMPs, SOPs, permit stipulations and mitigation measures to reduce visual impacts in order to meet VRM objectives. Based on implementation of land use plan goals, objectives and management actions, combined with OHV travel restrictions, the number of new trails or roads developed in areas would be reduced. These impacts would vary by alternative. Management of priority wildlife habitat,

watersheds, sensitive species management and ACECs would reduce uses in areas limiting changes to visual impacts on landscapes. Large landscape scale fuels projects would increase impacts on settings based on the number of acres treated. These impacts would gradually reduce as seeded species within fuelbreaks establish. Land tenure actions could impact visual resources management by increasing the ability to apply VRM tools to previously privately owned lands from acquisitions. Conversely, disposals would remove VRM from previously managed public lands.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Incremental cumulative impacts would be similar for all alternatives. The degree of impacts would be dependent on the location and number of acres disturbed and level of development as they relate to visual resource management objectives. Implementing mitigated based on BMPs, SOPs, and permit requirements to achieve VRM management goals and objectives within VRM class areas would reduce impacts from uses, depending on the VRM class management objectives. VRM impacts would vary based on the number of acres designated with use restrictions based on priority wildlife and watershed management, sensitive species management and the number of ACECs designated.

Overall incremental impacts would be low and would vary based on the location, size and number of developments, the number of acres disturbed on public lands, and the VRM management objectives applicable by location.

4.2.16 Cave and Karst

Summary

This section presents potential impacts of the alternatives on caves and karst features in the planning area. Caves and rock areas provide day and night roosting habitat for bat species and are important elements in supporting the sensitive species in the planning area. Caves and karst features also provide opportunities for recreation. Lovelock Cave is listed on the National Register of Historic Places.

Karst features can occur in carbonate rock formations; however, no significant karst features have been identified in the WD. The planning area has not been systematically surveyed for caves.

Caves are geologic features, and the discussion of the management actions and potential impacts on geologic resources applies to them as well. The actions concerning bats are also discussed under Special Status Species Management.

Impacts on caves occur by excavation, theft, vandalism, and large-scale surface-disturbing activities such as mining. Experience has shown that damage, theft, and vandalism are usually concentrated near roads and trails. Impacts on caves may increase because of additional visitation to areas within the planning area.

Overall, objectives and actions associated with other resources that result in closure to surface disturbance activities would have beneficial impacts (less chance of disturbance) on any caves that might be present. These other objectives and actions are referenced below.

If caves are found during the surveys required prior to surface-disturbing activities, mitigation measures would be developed and implemented to protect these features.

Methods of Analysis

Methods and Assumptions

The analysis of potential impacts on caves is based on the expertise of BLM resource specialists at the WD, a review of existing literature, and information provided by non-planning team experts in the BLM and other agencies.

The following assumptions regarding the resource base and management practices were considered in the analysis:

- The greatest potential for impacts would result from actions that include direct large-scale disturbance of bedrock that includes caves;
- Damage, theft, and vandalism is likely to increase with increased visitation;
- The bats that might live in caves could be impacted by vandalism, noise from visitors, and litter;
- Education of the public increases support for protection of caves and bats but also increases visitation; and
- Actions associated with other resources that result in closure of surface-disturbing activities would have additional beneficial impacts (such as less chance of disturbance) on any caves that might be present.

The area of analysis for cumulative effects on caves is defined as northwestern Nevada.

Cave and Karst: Effects from Air Quality Management

Effects Common to All Alternatives

There likely would be no impacts under any of the alternatives on cave and karst resources resulting from air quality management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Geology Management

Effects Common to All Alternatives

The geology objectives and actions do not involve features that are near known caves. There likely would be no impacts on cave and karst resources resulting from geology management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Soil Resources Management***Effects Common to All Alternatives***

There likely would be no impacts under any of the alternatives on cave and karst resources resulting from soil resources management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Water Resources Management***Effects Common to All Alternatives***

There would be no effects common to all the alternatives on cave and karst resources resulting from water resources management objectives or actions.

Effects under Alternative A

There likely would be no impacts under any of the alternatives on cave and karst resources resulting from water resources management objectives or actions under Alternative A.

Effects under Alternative B

Large scale water importation/ exportation projects are likely to target deeper, regional aquifers usually with a large degree of secondary storage. These aquifers are usually associated with highly fractured volcanics or limestone formations with significant dissolution features. Cave and karst could experience far reaching impacts if water use is significantly above the potential recharge for these complex and difficult to characterize aquifers.

Effects under Alternative C

Effects from water importation/exportation projects would be more fully mitigated and would have lesser impacts than under Alternative B.

Effects under Alternative D

Effects from water importation/exportation projects would be more fully mitigated and would have lesser impacts than under Alternative B.

Cave and Karst: Effects from Vegetation—Forest/Woodland Products Management***Effects Common to All Alternatives***

There likely would be no impacts under any of the alternatives on cave and karst resources resulting from forest and woodland products management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Vegetation—Invasive and Noxious Species Management***Effects Common to All Alternatives***

There likely would be no impacts under any of the alternatives on cave and karst resources resulting from weeds management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Chemical and Biological Control***Effects Common to All Alternatives***

There likely would be no impacts under any of the alternatives on cave and karst resources resulting from chemical and biological control management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Vegetation—Rangeland Management***Effects Common to All Alternatives***

There likely would be no impacts under any of the alternatives on cave and karst resources resulting from rangeland management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Vegetation—Riparian and Wetlands Management***Effects Common to All Alternatives***

There likely would be no impacts under any of the alternatives on cave and karst resources resulting from riparian and wetlands management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Fish and Wildlife Management***Effects Common to All Alternatives***

There likely would be no impacts under any of the alternatives on cave and karst resources resulting from fish and wildlife management objectives or actions. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Special Status Species Management***Effects Common to All Alternatives***

All alternatives require an inventory for bats and habitat usage before allowing any surface occupancy or disturbance within at least 200 yards of caves (500 yards for Alternative C) that are not known to be occupied. The inventories will increase the BLM's knowledge on the location and extent of bat habitat and will enable it to better protect bats in the inhabited areas. These protections would also protect the associated caves.

Effects under Alternative A

Large-scale surface-disturbing discretionary actions would not be allowed within 200 yards of occupied adits, caves, or other habitats. The associated caves would be protected from surface-disturbing activities as a result of the protection of the bats.

Effects under Alternative B

Surface-disturbing discretionary actions would be allowed near occupied adits, caves, or other habitats if mitigation measures to avoid or reduce adverse impacts were developed. Alternative B is less restrictive than Alternative A and depends on mitigating impacts rather than prohibition of actions near the bat habitats. The associated caves would be less protected under Alternative B.

Effects under Alternative C

Alternative C would require an inventory for bats and habitat usage before allowing any surface occupancy or disturbance within 500 yards of caves that are not known to be occupied, rather than within 200 yards as proposed under the other alternatives.

Large-scale surface-disturbing discretionary actions would not be allowed within 500 yards of occupied adits, caves, or other habitats. The protection of caves associated with bat habitat is greater under Alternative C than under Alternatives A, B, or D.

Effects under Alternative D

Large-scale surface-disturbing discretionary actions would not be allowed within 200 yards of occupied adits, caves, or other habitats. The protection of caves associated with bat habitat under Alternative D is greater than under Alternative B, is equivalent to Alternative A, and is less under Alternative C.

Cave and Karst: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from WHB management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Wildland Fire Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from wildland fire management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Cultural Resources Management

Effects Common to All Alternatives

There are many caves in the Winnemucca District that contain cultural resources, and any caves yet to be discovered could contain cultural resources. If so, these resources would be managed under the cultural resources program, in accordance with the cultural resource management objectives and actions.

Unless a cave contains cultural resources, there likely would be no impacts on cave and karst resources resulting from cultural resource management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Tribal Consultation Management

Effects Common to All Alternatives

Any caves yet to be discovered could also be a TCP. If so, the cave would be managed under the cultural resources program, in accordance with the cultural resource and tribal consultation management objectives and actions.

Unless a cave is connected to a TCP, there likely would be no impacts on cave and karst resources resulting from tribal consultation objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Paleontological Resources Management

Effects Common to All Alternatives

Any caves yet to be discovered could contain paleontological resources. If so, these resources would be managed under the paleontological resources program, in accordance with the paleontological resource management objectives and actions.

Unless a cave contains paleontological resources, there likely would be no impacts on cave and karst resources resulting from paleontological resources management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Visual Resources Management

Effects Common to All Alternatives

The known caves in the WD are not integral parts of any scenic viewshed. There likely would be no impacts on cave and karst resources resulting from visual resources management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

Increased visitation would result in a greater risk of impacts from vandalism as access is improved and locations become known.

Effects under Alternative A

There are no objectives or management actions under Alternative A. Under Alternative A, any protections would be on a case-by-case basis. There are no planned education or increased awareness programs.

Effects under Alternative B

Alternative B includes actions for identifying caves, for implementing appropriate mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and signing to protect the unique geologic features and wildlife habitat. These actions would also protect the cave resources. Alternative B includes greater protections for cave resources (e.g., closures and physical barriers) than Alternative A. The education and public awareness provisions would increase visitation to those areas, resulting in a greater risk of impacts from vandalism as access is improved and locations become known.

Effects under Alternative C

Alternative C includes actions for identifying caves, for implementing appropriate mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and signing to protect the unique geologic features and wildlife habitat. These actions would also protect the cave resources. Alternative C includes greater protections for cave resources (e.g., closures and physical barriers) than Alternative A and has essentially equivalent protections as Alternative B. Under Alternative C, the education and public awareness provisions would be limited to those that would not increase visitation and would involve less risk of impacts from vandalism than Alternatives B and D.

Effects under Alternative D

Alternative D includes actions for identifying caves, for implementing appropriate mitigation measures, such as seasonal closures, avoidance, fencing, bat gates, and signing to protect the unique geologic features and wildlife habitat. These actions would also protect the cave resources. Alternative B includes greater protections for cave resources (e.g., closures and physical barriers) than Alternative A. The education and public awareness provisions would increase visitation to those areas, resulting in a greater risk of impacts from vandalism as access is improved and locations become known.

Cave and Karst: Effects from Livestock Grazing Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from livestock grazing management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Minerals Management

Effects Common to All Alternatives

If caves are present where mining occurs, these resources could be impacted by the extent and depth of ground disturbance associated with saleable and locatable mineral development. Drilling activities could intersect with undiscovered caves or lava tubes.

While none of the known caves in the WD contain mineral resources, yet to be discovered caves might contain cave specific deposits (e.g., crystals and sheet flows). If so, they would be managed on a case-by-case basis in coordination with the minerals resources program objectives and actions, which include some restrictions on mining operations near caves.

Effects under Alternative A

There would be no restrictions to the amount of land open to mining activities or limits to mining operations based on caves and karst characteristics management objectives or actions under Alternative A. With respect to effects on minerals resources, Alternatives A, B, and D are essentially equivalent.

Effects under Alternative B

There would be no restrictions to the amount of land open to mining activities or limits on mining operations based on caves and karst characteristics management objectives or actions under Alternative B. With respect to effects on minerals resources, Alternatives A, B, and D are essentially equivalent.

Effects under Alternative C

The rights to locatable minerals are acquired, but proposals for saleable minerals and fluid and solid leasable minerals operations would be restricted within 500 feet of a cave or karst feature. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) intersected by the site or the 500-foot buffer line would be closed. This would have the effect of protecting the caves and associated bat habitat from disturbance. Under Alternative C, caves would have greater protection, and thus fewer impacts, under Alternative C than under Alternatives A, B, or D.

Effects under Alternative D

There would be no restrictions on the amount of land open to mining activities or limits on mining operations, based on caves and karst characteristics management objectives or actions under Alternative D. With respect to effects on minerals resources, Alternatives A, B, and D are essentially equivalent.

Cave and Karst: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from recreation, visitor outreach, and services management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

While exploring caves can be considered as recreational for some individuals and small groups, there would be no caves that are recognized as recreations sites.

Cave and Karst: Effects from Renewable Energy Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from renewable energy management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Transportation and Access Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from transportation and access management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Lands and Realty Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from lands and realty management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Caves and karst resources would be protected in areas identified with use restrictions (e.g., priority wildlife or priority watershed areas).

Cave and Karst: Effects from ACEC/RNA Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from ACEC/RNA management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Backcountry Byways Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from BCB management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

The Lovelock Cave Byway is managed in accordance cultural resource and byway management objectives and actions not as a cave resource.

Cave and Karst: Effects from National Historic Trails Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from national historic trails management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst features resulting from WSR management. There are no documented cave or karst features along the NWSRS eligible river segments.

Cave and Karst: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from wilderness, wilderness study areas, or lands with wilderness characteristics management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from watchable wildlife viewing sites management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Cave and Karst: Effects from Public Health and Safety Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from public health and safety management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

While there would be no caves specifically identified with safety issues, any actions involving sealing off a cave would be managed in accordance with public health and safety management objectives and actions.

Cave and Karst: Effects from Sustainable Development Management

Effects Common to All Alternatives

There likely would be no impacts on cave and karst resources resulting from sustainable development management objectives or actions under any of the alternatives. With respect to effects on cave and karst resources, all of the alternatives are essentially equivalent.

Caves & Karsts: Cumulative Effects

Past and Present Actions

Past and present impacts resulting from livestock grazing has generated no known impacts on caves and karsts. There have also been few known impacts from minerals, lands and realty, and renewable energy developments. Recreation use from caving has damaged some cave features due to removal or vandalism. Special status species management has included management actions that protect caves and karsts by restricting human access and to protect bats. WHB management and fire have had no known effects on caves and karsts.

Reasonably Foreseeable Actions

Impacts would be similar to the past and present actions. Activities associated with minerals, lands and realty, and renewable energy developments would increase the number of facilities, roads, and other disturbances that may directly impact caves. Based on implementation of land use plan goals, objectives, and management actions, disturbance near these features would be limited. Designated priority wildlife habitat, watershed and ACEC areas would restrict certain uses thereby reducing the potential for impacting cave resources.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

The degree of impacts would be dependent on the location and number of acres disturbed and level of development near cave and karst resources. Increasing recreation use over time may lead to further damage to cave and karst features. These impacts would be reduced based on implementing public outreach and education, seasonal closures, installation of bat gates, and other mitigation measures. Overall, incremental cumulative impacts would be minimal to caves and karsts.

4.3 RESOURCE USES

4.3.1 Livestock Grazing

Summary

Grazing would be impacted when all or part of an allotment is closed to livestock grazing (during vegetation treatments, prescribed burning, reforestation, fire, drought or watershed or riparian restoration). Grazing exclusion areas designed to protect riparian habitat for wildlife and sensitive species or to protect cultural or paleontological resources would impact livestock grazing by restricting or altering livestock movement and access to forage. Mineral and energy development would impact livestock grazing in the short and long term by decreasing the amount of grazing acreage available during construction and operation of these facilities. Alternative D would best

provide opportunities for grazing while meeting Sierra Front-Northwestern Great Basin RAC Standards and Guidelines for Rangeland Health, followed by Alternative B and then Alternative A; Alternative C, Option 2 provides the least opportunities for grazing. Actions under most resource categories have the potential to affect livestock grazing. Net changes from existing conditions in lands available for livestock grazing, grazing lands available for disposal, and available AUMs, by alternative are shown in Table 4-42.

Table 4-42
Change in Area Permitted for Grazing

	Alternative A	Alternative B	Alternative C (Option 1)	Alternative C (Option 2)	Alternative D
Lands available for livestock grazing	No net change: 8,232,727 acres	No net change: 8,232,727 acres	Net decrease: 8,038,084 acres	Net decrease: 0 acres	Net decrease: 8,016,754 acres
Grazing lands available for disposal (% of allotments available for disposal)	No net change: 2,663,082 acres (32%)	Net decrease: 1,934,038 acres (23%)	Net decrease: 1,040,225 acres (13%)	Net decrease: 7,926,430 acres (0%)	Net decrease: 1,093,046 acres (14%)
Available AUMs (Note: Other resource activities that change grazing acres would have same impact on AUMs)	No net change: 399,073 AUMs	No net change: 399,073 AUMs	No net change: 399,073 AUMs	Net decrease: 0 AUMs	Net decrease: 398,860 AUMs

Source: GIS Calculations of BLM (2011) data based on management actions as described in Chapter 2

Methods of Analysis

Methods and Assumptions

Impacts on livestock grazing are generally the result of activities that affect forage levels, livestock exclusion, or reduction of allotment acreage. Impact analysis is based on interdisciplinary team knowledge of resources and the planning area, a literature review, and information provided by BLM specialists. Certain assumptions are made, including the following:

- Data regarding grazing allotments are compiled from BLM sources;
- The BLM will continue to complete rangeland health assessments in accordance with the Sierra Front-Northwestern Great Basin RAC Standards and Guidelines for Rangeland Health;
- Allotments are monitored yearly, based on allotment priority, resource values, and potential for impacts due to grazing use; and
- Season of use and number of AUMs used are difficult to control on allotments with scattered public parcels surrounded by private land.

Livestock Grazing: Effects from Air Quality Management

Effects Common to Alternatives A, B, C, and D

Air quality management actions would have no impact to livestock grazing under any of the alternatives.

Livestock Grazing: Effects from Geology Management

Effects Common to All Alternatives

Protection of geologic features or exclusion from areas containing geologic features would not pertain to livestock grazing and would not impact grazing resources under any of the alternatives.

Effects under Alternative A

There would be no impacts on livestock grazing.

Effects under Alternative B

There would be no impacts on livestock grazing.

Effects under Alternative C

There would be no impacts on livestock grazing.

Effects under Alternative D

There would be no impacts on livestock grazing.

Livestock Grazing: Effects from Soil Resources Management

Effects Common to Alternatives A, B, C (Option 1), and D

Short-term direct impacts on livestock grazing would consist of adjustments in season and duration of use to prevent erosion and soil compaction caused by congregating cattle, especially under trees during hot season grazing. For example, protection of biological crusts and other sensitive soil types would pertain to livestock grazing and would impact grazing resources under all of the alternatives. In the long term, however, soil resources management would generally result in enhanced vegetative conditions through actions designed to reduce erosion, which would indirectly increase forage as the Standards for Rangeland Health are attained.

In addition to the impacts identified under Effects Common to All Alternatives, the following individual effects would impact livestock grazing.

Effects under Alternative A

Approximately 1,055,418 acres within livestock grazing allotments have a high potential for the existence of biological crusts under Alternative A. Protecting biological crusts would indirectly impact livestock grazing by increasing restrictions on range management, such as limiting livestock grazing to seasons when the soils are moist.

Effects under Alternative B

Approximately 1,055,418 acres within livestock grazing allotments have a high potential for the existence of biological crusts under Alternative B. Impacts would be the same as those under Alternative A.

Effects under Alternative C

Option 1

Impacts would be the same as those under Effects Common to All Alternatives; however, due to additional closures to livestock grazing under Alternative C, Option 1, only 1,055,167 acres within livestock grazing allotments would have a high potential for the existence of biological crusts. In addition, Alternative C is the most restrictive in managing biological crust by reducing activities that would impact or damage biological crusts.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from soil resources management.

Effects under Alternative D

Impacts would be the same as those under Effects Common to All Alternatives; however, due to additional closures to livestock grazing under Alternative D, only 1,048,390 acres within livestock grazing allotments have a high potential for the existence of biological crusts.

Livestock Grazing: Effects from Water Resources Management

Effects Common to Alternatives A, B, C (Option 1), and D

Livestock grazing would be directly affected by the need to adjust or modify current livestock management to achieve Sierra Front-Northwestern Great Basin RAC Standards and Guidelines for Rangeland Health under all of the alternatives. Developing water sources for multiple uses under all alternatives also would impact livestock grazing by making more water available, indirectly increasing weight gain and conception rates of livestock. More dispersed water sources would prevent livestock from concentrating around current water holes and would allow for changes in utilization patterns, which may result in an increase in available forage.

Protecting water quality and watershed health could require direct changes in livestock management such as deferred or shortened grazing periods, exclusion, establishing riparian pastures, and increased cattle herding. These tools are especially used during hot season grazing when cattle congregate in small shaded areas to cool off (often where there is water). Implementing short-term monitoring criteria such as stubble height and bank alteration would stabilize the banks and may decrease the amount of time livestock would be allowed to use an area.

Approximately 32,107 acres of livestock grazing allotments lie within designated municipal water supply areas under Alternatives A, B, C (Option 1), and D. Livestock grazing does not generally conflict with groundwater supplies; therefore, it would not be impacted by any of the municipal water supply actions identified under any of the alternatives.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Effects under Alternative A

Effects would be the same as those under Effects Common to All Alternatives.

Effects under Alternative B

Approximately 2,734 acres of livestock grazing allotments lie within wellhead protection zones under Alternative B. Action B-WR 1.5 directs the BLM to avoid impacts on wellhead protection zones, which would require extra management by grazing operators, such as fencing or increased livestock herding.

Approximately 185,767 acres of livestock grazing allotments lie within priority watersheds under Alternative B. Priority watersheds would be managed for multiple uses and could directly impact livestock grazing if the watershed becomes degraded and needs to be protected by actions such as increased livestock herding and or avoidance of degraded areas.

Permittees would be encouraged to file for water rights under Alternative B, which means they will have to pay to fund the projects if they want them. BLM will not fund projects if they do not have water rights.

Effects under Alternative C

Option 1

Approximately 2,734 acres of livestock grazing allotments lie within wellhead protection zones under Alternative C, Option 1. Action C-WR 1.5 directs the BLM to exclude discretionary actions within wellhead protection zones, which would prevent livestock from grazing in these areas.

Approximately 185,458 acres of livestock grazing allotments lie within priority watersheds under Alternative C, Option 1. Priority watersheds would be managed as exclusion areas and used only for the resource for which it was established as a priority. Management under this action would exclude grazing from the 185,458 acres of priority watersheds and would reduce forage availability in the impacted allotments. Water availability also could be impacted. Management under this action would have the greatest direct impact on livestock grazing.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from water resources management.

Effects under Alternative D

In addition to the impacts identified under Effects Common to All Alternatives, under Alternative D 2,623 acres of livestock grazing allotments lie within wellhead protection zones and 184,643 acres lie within priority watersheds. These portions of the allotments would be protected from surface disturbance through more stringent use restrictions than under Alternatives A or B, therefore, forage would remain available for livestock use.

Livestock Grazing: Effects from Vegetation—Forest/Woodland Products Management***Effects Common to Alternatives A, B, C (Option 1), and D***

Stand health treatments would improve the ecological condition of vegetation in forested areas, thereby increasing forage available for grazing.

Effects under Alternative A

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative B

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative C***Option 1***

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from forest and woodland products management.

Effects under Alternative D

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Livestock Grazing: Effects from Vegetation—Invasive and Noxious Species Management***Effects Common to Alternatives A, B, C (Option 1), and D***

Encroachment of weeds into grazing areas reduces the preferred forage for livestock until treated. Actions to prevent and control invasive and noxious weeds using integrated weed management techniques could directly affect livestock grazing in the short term if livestock are excluded in the treatment areas until revegetation has taken place. Livestock grazing would improve over the long term as the ecological condition of vegetation in grazing allotments improves following restoration. In addition to the impacts identified under Effects Common to All Alternatives, the following individual effects would impact livestock grazing.

Effects under Alternative A

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative B

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative C

Option 1

Eliminating chemicals to control noxious weeds could result in a greater rate of weed spread, as most alternate controls are not as effective or rapid enough to control the spread of weeds. Vegetation sites converted to noxious weeds would be lost to livestock grazing.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from weeds management.

Effects under Alternative D

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Livestock Grazing: Effects from Chemical and Biological Control

Effects Common to Alternatives A, B, C (Option 1), and D

Implementing chemical and biological control methods under all alternatives to control pests could indirectly impact livestock grazing by improving the rangeland health environment for livestock. For example, reducing the populations of Mormon Crickets would reduce the amount of degradation to the vegetative resource available for livestock grazing. Actions to prevent and control pests using pesticides and biological techniques could directly affect livestock grazing in the short term if livestock are excluded in the treatment areas until revegetation has taken place. Livestock grazing would improve over the long term as the ecological condition of vegetation in grazing allotments improves following restoration.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Effects under Alternative A

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative B

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative C

Option 1

Eliminating the use of chemicals to control pests may result in a greater rate of infestation, as most alternate controls are not as effective or rapid enough to control the spread. Vegetation exposed to uncontrolled infestations could be lost to livestock grazing.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from chemical and biological control.

Effects under Alternative D

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Livestock Grazing: Effects from Vegetation—Rangeland Management*Effects Common to Alternatives A, B, C (Option 1), and D*

Allowing vegetation treatment areas to rest would result in direct short-term limited livestock management impacts such as decreases in AUMs, livestock herding, pasture rotations, and exclusion from the treated area. In the long term, resting treated areas would enhance vegetation by allowing seedlings to establish, resulting in a sustained forage base. The shortest minimum rest time under the alternatives is two years, and the longest minimum rest time is five years. In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing:

Effects under Alternative A

Impacts would be the same as identified under Effects Common to Alternatives A, B, C (Option 1), and D, except that they would be limited to at least two years or until monitoring objectives established in the Emergency Stabilization or Burned Area Rehabilitation Plans are achieved or until rehabilitation efforts are determined to be failures. Restoration of the crested wheatgrass seedings would allow operators to remove their cattle early from native pastures or pastures with riparian areas and go to the crested wheatgrass seedings. This would allow reduced use or critical growing season rest for the native species and allow for reduced use and a longer recovery period in the riparian areas.

Effects under Alternative B

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D, except that livestock would be allowed to graze cheatgrass during April to control it for two years, before full livestock numbers return.

Restoration and enhancement of the crested wheatgrass seedings would allow operators to move their cattle early from native pastures or pastures with riparian areas to the crested wheatgrass seedings. This would allow reduced use or critical growing season rest for the native species and allow reduced use and a longer recovery period in the riparian areas. Prescriptive grazing could potentially provide additional options to livestock operators, while accomplishing a desired outcome (i.e., fuel breaks and reduction of fine fuels).

Effects under Alternative C

Option 1

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D, except that they would be limited to a minimum of five years.

Crested wheatgrass seedings would be allowed to convert back to native plant communities, which could reduce the amount of AUMs available for livestock consumption.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from rangeland management.

Effects under Alternative D

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D, except that they would depend on various factors such as whether or not emergency stabilization and rehabilitation plan objectives are achieved, waiting until previously vegetated areas have regained vigor, or determining that rehabilitation efforts are a failure.

Restoration of the crested wheatgrass seedings would allow operators to move their cattle early from native pastures or pastures with riparian areas to the crested wheatgrass seedings. This would allow reduced use or critical growing season rest for the native species and allow reduced use and a longer recovery period in the riparian areas. Prescriptive grazing could potentially provide additional options to livestock operators, while accomplishing a desired outcome (i.e., fuel breaks and reduction of fine fuels).

Livestock Grazing: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to Alternatives A, B, C (Option 1), and D

Riparian and wetland restoration has the potential to directly impact livestock grazing through adjustments in season of use, livestock numbers, and development of riparian objectives such as stubble height and bank alteration to ensure that the riparian habitat is meeting the standards for rangeland health.

Livestock that congregate in riparian areas can affect proper functioning condition by increasing erosion and adding turbidity to water sources. Livestock that congregate in riparian areas also increase fecal coliform and nitrate levels. Therefore, protecting riparian areas (changing season of use and bank trampling limitations or temporary exclosures) from grazing animals could allow riparian habitat to maintain or improve and indirectly provide cleaner and more dependable water sources for livestock. Wetland riparian areas and meadow habitats are also examples of key management areas for developing stocking levels during implementation level planning. BLM Technical Reference 4400-7, on page 54 “Desired Stocking Level,” states, “The calculation of a desired stocking level also depends on the identification of a key management area. A key management area is an area of land that influences or limits the use of the land surrounding it. Examples of key management areas could be riparian, wetland or meadow areas surrounded by

uplands. Maintaining proper use on the meadow could cause low use on the uplands. A key management area is the key area that overrides the indicators of the other key areas within the management unit. Management actions are based on the key management areas

In the meadow and upland example, the meadow and upland may each have a key area. Since the meadow is the key management area, if use exceeds the limits on the meadow but not on the uplands, the stocking level will be reduced to meet the riparian objectives although the uplands will also receive less use. If a riparian area is healthy the correlation is that the uplands are usually healthy.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Effects under Alternative A

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D. In addition, riparian and wetland restoration has the potential to directly impact livestock grazing by requiring exclosures to be constructed or AUMs to be reduced. Structures would alter livestock movement and use patterns. Off-site water developments could be proposed as a mitigation measure to provide water for livestock or to keep livestock from accessing the springs and creeks for water. The cost of constructing these projects could financially impact the BLM and the permittees.

Effects under Alternative B

Impacts would be the same as under Alternative A, with the exception of reducing AUMs. More structural improvements would be applied to achieve PFC on 60 percent of the riparian wetland areas.

Effects under Alternative C

Option 1

Implementing a more aggressive PFC goal of 85 percent of the riparian areas achieving PFC under Alternative C, Option 1 would have a high direct impact on livestock grazing. Under this alternative, there would be no fence construction to protect the riparian areas. Protection would occur by reducing livestock seasons of use, altering AUMs, closing areas to livestock grazing in addition to the measures identified under Effects Common to All Alternatives.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from vegetation- riparian and wetlands management.

Effects under Alternative D

Impacts would be the same as under Alternative A. However, BLM would look at using natural processes to improve riparian health, as described under Alternative C, Option 1.

Livestock Grazing: Effects from Fish and Wildlife Management***Effects Common to Alternatives A, B, C (Option 1), and D***

Wildlife species could compete with livestock for forage, water, and cover when they occupy the same area. Big game species such as elk, bighorn sheep, pronghorn, and deer compete for similar forage as cattle, sheep, and horses. During the fall, deer prefer the same browse species as sheep and cattle, creating an intensified competition for forage. Fish and wildlife habitat management activities would directly affect livestock grazing through restrictions on grazing management, such as increased rotation, timing, or season of use and/or reduced forage.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Effects under Alternative A

Under Alternative A, BLM would coordinate with NDOW to establish pioneering elk populations in potential habitat. Many times, elk and cattle share similar diets, depending on forage dynamics and cattle stocking rate (Greenwood 2007). Elk and cattle diets overlap, but they may use the forage at different times of the year (Greenwood 2007). Elk and livestock could compete for forage, water, and cover if these needs are in short supply. When forage is not available, it is likely that elk would resort to feeding on haystacks and commingling with livestock feed lines. There is a risk of the spread of brucellosis between elk and cattle when they commingle. Transmission of brucellosis has been a concern since the early 1900s, when the disease was discovered in both species. Cattle were immunized for brucellosis in the early 1940s, but wildlife was not treated to prevent brucellosis (Greenwood 2007). Elk and cattle separation may be necessary to prevent the disease from impacting the grazing management practices if the BLM accepted a recommendation from NDOW on elk establishment.

Protection of waterfowl habitat would occur without precluding multiple uses; therefore, no impacts on livestock grazing would occur.

Fencing out livestock from reservoirs that support fisheries would directly impact livestock grazing by reducing the amount of water available to the livestock. This impact could be mitigated by piping water off-site for livestock use. In active sheep allotments, bighorn sheep would not be introduced unless all conflicts are resolved; therefore, there would be no impacts on sheep operators. Providing additional water sources for wildlife under Alternative A could directly impact grazing by reducing competition for water and making available additional water sources. Developing spring sources with fencing under Alternative A would directly impact livestock grazing by providing and maintaining a more permanent water source for livestock.

Introducing wildlife in potential habitats could indirectly impact livestock grazing by increasing disturbance from recreational activities such as hunting and wildlife viewing. In order to achieve stream bank alteration percentages under Alternative A, implementation measures such as season of use, exclusion, reducing livestock numbers and rotational grazing practices could be applied.

Effects under Alternative B

No elk establishment would be allowed under Alternative B, and no impacts on livestock grazing would result from elk and livestock competition.

Shorebird habitat would be protected under Alternative B without precluding multiple uses, including livestock grazing. No impacts on livestock grazing would occur.

Providing additional water sources under Alternative B would directly impact livestock grazing the same as under Alternative A. Developing spring sources that may be fenced on a case-by-case basis under Alternative B would directly impact livestock grazing by providing and maintaining a more permanent water source for livestock. This alternative may be more feasible financially for both the permittees and BLM.

In active sheep allotments, bighorn sheep would not be introduced unless all conflicts are resolved; therefore, there would be no impacts on sheep operators.

Introducing wildlife under this alternative would not interfere with other multiple uses; therefore, livestock grazing would not be affected.

Alternative B would protect and improve wildlife habitat by initiating land treatments by any means available to BLM (including the use of chemicals). Certain chemicals can be harmful to livestock adding a risk to livestock health; however the use of chemicals may be necessary or more effective for certain land treatments. Vegetation treatment areas would be allowed to rest, which would result in short-term limited livestock management impacts such as decreases in AUMs, livestock herding, pasture rotations, and exclusion from the treated area. In the long term, resting treated areas would enhance vegetation by allowing seedlings to establish, perennial plants to recover, and a sustained forage base to develop.

In order to achieve stream bank alteration percentages of 20 percent of linear bank length on fishery streams, spring brooks, and lentic fishery resources and on those with sensitive channel types under Alternative B, implementation measures such as season of use, exclusion, reducing livestock numbers and rotational grazing practices could be applied.

Effects under Alternative C

Option 1

Direct Impacts on livestock grazing from possible elk establishment would be greatest under Alternative C, Option 1 because the BLM would accept an elk establishment recommendation from NDOW.

Bighorn sheep would not be introduced on active preference sheep allotments, so there would be no impacts on sheep operators. Reintroducing native wildlife into historic habitat areas may indirectly impact livestock by increasing disturbance from recreational activities such as hunting and wildlife viewing.

Alternative C, Option 1 would protect and improve wildlife habitat by initiating land treatments without the use of chemicals, which would be safer for the livestock but might not be as successful.

Vegetation treatment areas would be allowed to rest, which would result in short-term limited indirect livestock management impacts such as decreases in AUMs, livestock herding, pasture rotations, and exclusion from the treated area. In the long term, resting treated areas would enhance vegetation by allowing seedlings to establish, perennial plants to recover, and a sustained forage base to develop.

Fencing out livestock from shorebird habitat and reservoirs that support fisheries would directly impact livestock grazing by reducing the amount of water available to the livestock. This impact could be mitigated by piping water off site for livestock use.

Not providing artificial water sources under Alternative C, Option 1 would directly impact livestock grazing during droughts by increasing competition between wildlife and livestock. Springs would not be developed and fenced under Alternative C, Option 1. In order to protect springs, increased livestock management such as season of use would be applied.

Actions to improve or maintain stream and shoreline channel stability and to limit annual stream bank alteration impacts would have the greatest direct impact on livestock grazing management by setting stricter regulations under Alternative C, Option 1.

In order to achieve stream bank alteration percentages of 10 percent or less of linear bank length on fishery streams, spring brooks, and lentic fishery resources and 5 percent or less on those with sensitive channel types, implementation measures such as season of use, exclusion, reducing livestock numbers, and rotational grazing practices could be applied. The aforementioned goals would limit the greatest amount of time cattle could spend in the riparian area, resulting in the greatest direct impact on livestock grazing management.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from fish and wildlife management.

Effects under Alternative D

Impacts on livestock grazing from possible elk establishment would be the same as under Alternative A.

Shorebird habitat protection measures and fencing reservoirs that support fisheries would directly impact livestock the same as under Alternative C, Option 1. Providing additional water sources under Alternative D would directly impact livestock grazing the same as under Alternative A.

In active sheep allotments, bighorn sheep would not be introduced unless all conflicts are resolved; therefore, there would be no impacts on sheep operators.

Wildlife would only be introduced if they do not displace native wildlife. This could indirectly impact livestock by increasing disturbance from recreational activities such as hunting and wildlife viewing.

Impacts from land treatments would be similar to those under Alternative B.

In order to achieve stream bank alteration percentages of 20 percent or less of linear bank length on fishery streams, spring brooks, and lentic fishery resources and 10 percent or less on those with

sensitive channel types under Alternative D, implementation measures such as season of use, exclusion, reducing livestock numbers, and rotational grazing practices could be applied. The 10 percent or less sensitive channel type goal would limit the amount of time cattle could spend in the riparian area, creating a greater impact on livestock grazing management. Providing artificial water sources for wildlife would expand habitat uses into areas not previously used as habitat. Competition for forage or food between livestock and wildlife might increase in those areas.

Direct impacts on livestock grazing from spring development would be the same as under Alternative A.

Livestock Grazing: Effects from Special Status Species Management

Effects Common to Alternatives A, B, C (Option 1), and D

Protecting special status plants and special status species habitat could directly affect livestock grazing by limiting grazing areas and seasons of use. Special status species habitats also would directly influence location, timing, and cost of range improvements.

Conversely, protecting riparian areas that support special status species from grazing animals could provide cleaner and more dependable water sources for livestock in the long term.

Effects under Alternative A

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative B

Allowing for prescriptive grazing within enclosures containing wet meadow or riparian habitat on a case-by-case basis could directly provide additional flexibility and the ability to accrue extra income for livestock operators, while accomplishing a desired outcome (i.e., fuel breaks and reduction of fine fuels).

Effects under Alternative C

Option 1

By not allowing for prescriptive grazing within enclosures containing wet meadows or riparian habitat, livestock operators do not benefit from the flexibility allotted them while accomplishing a desired outcome (i.e., fuel breaks and reduction of fine fuels).

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from special status species management.

Effects under Alternative D

Impacts would be the same as under Alternative B.

Livestock Grazing: Effects from Wild Horse and Burro Management

Effects Common to Alternatives A, B, C (Option 1), and D

When livestock and wild horses occupy the same area, their needs for water and forage are competitive. In extreme circumstances, wild horses could outcompete livestock temporarily and could preclude livestock access to certain water sources. Livestock and WHB conflicts could include damage to fences. Competition for water and forage would be mitigated through adjustments in season of use, AUMs, AMLs and water developments, which would improve distribution of livestock and WHB, therefore adjustments to both livestock and WHB may occur.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the individual effects below would impact livestock grazing.

Effects under Alternative A

Removing all WHB from HMAs within checkerboard lands would reduce competition with livestock for forage, water, and shelter in those allotments. Gathering WHB before AML levels are exceeded reduces competition for food, water, and shelter in grazing allotments and maintains or improves rangeland health. Using fertility control inhibitors to slow population growth rates of WHB would decrease competition for food, water, and shelter with livestock and would assist in maintaining a healthy rangeland environment.

Effects under Alternative B

Gathering WHB before AML levels are exceeded, and using fertility control inhibitors on WHB would directly impact livestock grazing the same as under Alternative A.

Implementing appropriate management actions primarily for WHB over livestock under conditions where allotment-specific objectives and the Standards for Rangeland Health are not being met would directly impact grazing by maintaining AUMs for livestock and by reducing AMLs for WHB.

Under Alternative B, the Nightingale and Shawave Mountain HMAs would be removed, resulting in a decrease in approximately 190,630 acres of HMAs that overlap with grazing allotments. Reducing the amount of acreage of HMAs that overlap with the Bluewing Seven Troughs Allotment reduces competition among livestock and WHB for forage, water, and shelter. The increased acreage in the Bullhead Allotment could increase competition between livestock and wild horses.

Alternative B would reduce competition greater than any of the other alternatives.

Effects under Alternative C

Option 1

Adjusting HMA boundaries and removing WHB from the checkerboard portion of the Nightingale and Shawave Mountain HMAs to eliminate checkerboard land issues would decrease competition with livestock for forage, water, and shelter in areas of checkerboard lands.

Under Alternative C, Option 1, approximately 20,500 acres of HMAs within grazing allotments would be reduced due to boundary adjustments (slight increase in the McGee HMA and a fair

decrease in the Shawave Mountain and Nightingale HMAs). This action reduces competition between livestock and WHB for forage, water, and shelter and represents less of an impact than under Alternative B or D but a greater impact than under Alternative A.

Gathering excess WHB to achieve AML by using no less than a four-year gather cycle could impact grazing if excess numbers of WHB that compete for food, water, and shelter in grazing allotments were present before the four-year time period.

Not using fertility control measures on WHB could lead to unmanageable numbers of WHB during highly fertile breeding years, increasing the competition for food, water, and shelter with livestock and increasing degradation of the rangeland environment.

Implementing appropriate management actions primarily for threatened and endangered (T&E) species over WHB, under conditions where allotment-specific objectives and the standards for rangeland health (SRH) are not being met, would impact grazing by disproportionately reducing AML versus AUM. Therefore, this action would directly reduce impacts on livestock grazing by decreasing potential WHB competition.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from WHB management.

Effects under Alternative D

Deleting the checkerboard portion of the Nightingale and Shawave Mountain HMAs would have the same impacts on livestock grazing as under Alternative C, Option 1. Gathering WHB before AML levels are exceeded and using fertility control inhibitors on WHB would directly impact livestock grazing the same as under Alternative A.

Under Alternative D, approximately 41,536 acres of HMAs within grazing allotments would be reduced due to boundary adjustments, with the exception of the Snowstorm Mountain HMA, which would be slightly expanded. This action reduces competition between livestock and WHB for forage, water, and shelter and represents less of an impact than under Alternative B, but a greater impact than under Alternatives A or C (Options 1 and 2).

Implementing appropriate management actions would occur to livestock or WHB relative to the degree to which each animal species is contributing to the non-attainment of resource objectives (if known) or proportionally (if unknown). This could directly impact livestock grazing by either reducing livestock AUMs or WHB AMLs.

Livestock Grazing: Effects from Wildland Fire Management

Effects Common to Alternatives A, B, C (Option 1), and D

Wildland fire would have varying effects on livestock grazing, depending on fire size and intensity, the timing of the fire, and fuel moisture content. Wildland fire would initially displace livestock, and depending on the proximity of the livestock to the fire, livestock could be stressed, injured, or killed. Wildland fire would remove vegetation and forage over the short term. Over the long term, wildland

fire could improve forage production, especially when post-fire management efforts are implemented. ES&R would close areas to livestock grazing in order to protect seeded species and increase success, thereby protection the seeded species from overgrazing in the short term and establishing a stable forage base in the long term. Establishing fuelbreaks would help protect livestock forage.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Effects under Alternative A

Prescribed fire would be used to reduce or rejuvenate shrub cover and increase herbaceous forage for grazing animals. Prescribed fire would result in short-term deferment of livestock grazing to allow for herbaceous recovery. Increased sediment loads following prescribed fires may fill stock ponds, thereby reducing capacity and putting additional burden on the permittee to empty and clean ponds. Prescribed fire may impact range improvements, enhance forage availability and production, and reduce the likelihood of wildland fire occurrence. Short-term impacts of prescribed fire could include an increase of cheatgrass following treatment in areas where cheatgrass is the dominant understory grass. Prescribed fire could be used in mountain big sagebrush communities in late ecological status to provide diversity of age classes for shrubs. Prescribed fire could also be used as a pre-treatment for weed control prior to an herbicide application.

Zero acres of livestock grazing allotments would be considered suitable for conditional fire suppression management for a benefit. Conditional fire suppression management for a benefit is a treatment that involves taking advantage of a naturally ignited wildland fire in an area where fire would benefit resources. Having no areas designated to allow conditional fire suppression management for a benefit would impact livestock grazing. Enhancement of the livestock forage base would not occur as mature and decadent stands of fire resistant vegetation would not be allowed to burn. Species composition would not improve. Allowing natural fire would promote the establishment of forbs and grasses. Species composition would be improved. In the long term, livestock would not have a sustained forage base in certain areas if fire is not allowed for conditional fire suppression management for a benefit.

Effects under Alternative B

Under Alternative B, 107,757 acres of livestock grazing allotments would be considered suitable for emphasis of conditional fire suppression management for a benefit. In the short term, livestock would lose forage in burned areas. In the long term, conditional fire suppression management for a benefit could improve forage production by restructuring the age class of shrubs and increasing the density and composition of grasses and forbs. Impacts from prescribed fire would be the same as under Alternative A.

Effects under Alternative C

Option 1

Zero acres of livestock grazing allotments would be considered suitable for conditional fire suppression management for a benefit under Alternative C, Option 1. Prescribed fire would not be

used under Alternative C, Option 1, which would avoid short-term deferment of livestock grazing during recovery or increased sediment loads in stock ponds. Forage may not be enhanced in the long term, however, and the likelihood of wildland fire occurrence could be increased without the use of prescribed fire.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from wildland fire management.

Effects under Alternative D

Impacts would be the same as those described under Alternative B.

Livestock Grazing: Effects from Cultural Resources Management

Effects Common to Alternatives A, B, C (Option 1), and D

In general, management actions associated with cultural resources affect relatively small localized areas and would have negligible effects on livestock forage. Even under the most intensive management, such as excavation, the acreage disturbed would be small. Fencing some cultural sites could exclude grazing and cause a loss of available forage. Restrictions on surface-disturbing and other disruptive activities near cultural sites could require that some range improvements be modified or relocated, and in rare cases improvements could be precluded.

Effects under Alternative A

The indirect short-term impact of maintaining culturally sensitive areas as open to OHV use would be a reduction in forage and temporary displacement of livestock. The indirect long-term impacts of maintaining culturally sensitive areas as open to OHV use include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment.

Effects under Alternative B

Indirect impacts on livestock grazing by maintaining culturally sensitive areas as open to OHV use would be the same as under Alternative A.

Effects under Alternative C

Option 1

Limiting OHV use in culturally sensitive areas would indirectly affect livestock grazing by keeping OHVs on specific routes and reducing the conflicts that can arise with livestock and OHV interactions (such as harassment of livestock). Limiting OHV use to designated trails, however, could impact permittees that use OHVs to herd cattle. Closing Class I segments of the National Historic Trail segments to OHV use could prevent permittees from accessing their cattle in a timely fashion where allotments overlap with these trail segments.

Option 2

Since there is no livestock grazing under Option 2, there would be no impacts on livestock grazing from cultural resources management.

Effects under Alternative D

Indirect impacts on livestock grazing by limiting OHV use to designated trails in culturally sensitive areas and closing Class I segments of the National Historic Trail segments to OHV use would have the same impacts on livestock grazing as under Alternative C, Option 1.

Livestock Grazing: Effects from Tribal Consultation

Effects Common to Alternatives A, B, C (Option 1), and D

No specific effects have been identified from management actions related to tribal consultation. The BLM would continue to consult with tribes regarding treaty rights, cultural access, and use of plants, animals, fish, and habitats. Consultation could result in identifying areas where current or proposed livestock grazing could need to be modified to accommodate tribal uses or to avoid resources important to tribes. However, it is unlikely that accommodating tribal uses would be inconsistent with providing opportunities for grazing within the WD in the long term.

Effects under Alternative A

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative B

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative C

Option 1

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from tribal consultation.

Effects under Alternative D

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Livestock Grazing: Effects from Paleontological Resources Management

Effects Common to Alternatives A, B, C (Option 1), and D

In general, management actions associated with paleontological resources affect relatively small localized areas and would have negligible effects on livestock forage. Fostering public awareness of paleontological resources could increase human and livestock interactions in areas that contain

deposits, thereby indirectly increasing the amount of disturbance and harassment caused by these interactions. However, these actions would affect relatively small localized areas and impacts would be rare and limited to localized areas.

Effects under Alternative A

Fostering public awareness of paleontological resources could increase human and livestock interactions in areas that contain deposits, thereby indirectly increasing the amount of disturbance and harassment caused by these interactions. However, these actions would affect relatively small localized areas and impacts would be rare and limited to localized areas.

Effects under Alternative B

Preventing discretionary activities, such as livestock grazing, on public lands unless impacts could be mitigated could directly impact grazing by excluding grazing in these areas. Fostering public awareness of paleontological resources would indirectly impact livestock grazing the same as under Alternative A.

Effects under Alternative C

Option 1

Impacts from preventing discretionary activities on public lands unless impacts could be mitigated would directly impact livestock grazing the same as under Alternative B. Prohibiting OHV use in areas that contain vulnerable paleontological deposits could reduce OHV and livestock interactions but would directly prevent permittees from accessing their cattle in a timely fashion where allotments contain these deposits. Fostering public awareness of paleontological resources only if it does not promote increased visitation to sites under Alternative C, Option 1 would not impact livestock grazing because visitor use would not increase and visitor and livestock interactions would not increase.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from paleontological resources management.

Effects under Alternative D

Impacts from preventing discretionary activities on public lands unless impacts could be mitigated would directly impact livestock grazing the same as under Alternative B. Impacts from prohibiting OHV use in areas that contain vulnerable paleontological deposits would have the same indirect impacts as under Alternative C, Option 1. Fostering public awareness of paleontological resources would indirectly impact livestock grazing the same as under Alternative A.

Livestock Grazing: Effects from Visual Resources Management

Table 4-43 shows the VRM classes that overlay grazing allotments under each alternative.

Table 4-43
VRM Designations within Grazing Allotments

VRM Class	Alternative A (acres)	Alternative B (acres)	Alternative C (Option 1) (acres)	Alternative C (Option 2) (acres)	Alternative D (acres)
I	406,328	403,648	436,478	0	403,648
II	319,961	375,629	2,822,951	0	375,629
III	662,470	2,201,765	2,667,695	0	220,1765
IV	5,183,180	3,660,228	744,953	0	366,0228

Source: BLM 2011

Effects Common to Alternatives A, B, C (Option 1), and D

Livestock and their handling facilities may be authorized under all VRM classes; however, the design and placement of new range improvements in VRM Class I and II areas would have to be constructed in such a way as to repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape, as identified in BLM Handbook H-8410-1. Specifically constructing range improvements to follow the BLM Handbook H-8410-1 could directly place a financial burden on permittees and the BLM Class III objectives state that the level of change to the character of the landscape would be moderate; however, management activities could dominate the view and be the major focus of viewer attention (BLM Handbook H-8410-1) (BLM 1986). Class IV objectives state that the level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt would be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements. Class III and IV objectives would have a minimal impact on livestock grazing facility management.

In general, VRM classes that restrict surface-disturbing activities would indirectly help to maintain forage levels by reducing activities that could eliminate forage, harass livestock and increase the potential for noxious or invasive weeds.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Effects under Alternative A

Five percent of the available grazing acreage would fall within VRM Class I areas, and four percent would fall within VRM Class II areas.

Effects under Alternative B

Table 4-43, VRM Designations within Grazing Allotments, displays VRM class designations within available grazing allotments under Alternative B. Five percent of the available grazing acreage would fall within VRM Class I areas, and five percent would fall within VRM Class II areas. The indirect impacts on new range improvements would be similar to Alternative A and less than the other alternatives.

Effects under Alternative C

Option 1

Table 4-43, VRM Designations within Grazing Allotments, displays VRM class designations within available grazing allotments under Alternative C, Option 1. Five percent of the available grazing acreage would fall within VRM Class I areas, and 34 percent would fall within VRM Class II areas. The indirect impacts on new range improvements would be greater than under all of the other alternatives because of the greatest amount of acreage is designated Class II.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from visual resources management.

Effects under Alternative D

Table 4-43, VRM Designations within Grazing Allotments, displays VRM class designations within available grazing allotments under Alternative D. Five percent of the available grazing acreage falls within VRM Class I areas, and 5 percent falls within VRM Class II areas. The indirect impacts on new range improvements would be the same as Alternatives A and Band less than under Alternative C, Option 1.

Livestock Grazing: Effects from Cave and Karst Resources Management

Effects Common to Alternatives A, B, C (Option 1), and D

Livestock do not generally graze on steep slopes along hillsides, where caves tend to be located. Caves that are accessible to livestock do not contain forage; however, if the caves are protected or fenced, this could directly impact livestock grazing by reducing a source of shade or shelter from inclement weather.

Effects under Alternative A

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative B

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative C

Option 1

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from cave and karst resources management.

Effects under Alternative D

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Livestock Grazing: Effects from Livestock Grazing Management

Effects Common to Alternatives A, B, C (Option 1), and D

In general, livestock grazing on public lands provides a source of income to the permittees within the WD. Impacts from livestock grazing on the livestock grazing program would primarily be related to annual forage removal. Implementing BMPs and grazing management systems that achieve the Sierra Front-Northwestern Great Basin RAC Standards and Guidelines for Rangeland Health would improve forage conditions over the long term, indirectly improving livestock health and increasing conception rates.

If monitoring data indicate that impacts on resources are occurring from livestock grazing, then appropriate adjustments would be made to livestock AUMs, seasons of use, or utilization levels. Adjusting AUMs could potentially impact the rancher negatively or positively depending on the situation. Adjusting seasons of use could limit permittee flexibility; reducing the amount of available forage in the short term. Livestock removal during the critical growth period also may coincide with the rancher's farming activities, thereby limiting where ranchers could put their livestock.

In the long term, meeting utilization levels could lead to attainment of standards for rangeland health, which would create a sustained forage yield.

In areas where allotments coincide with HMAs, livestock operators would not be authorized to graze domestic horses and burros in order to prevent wild horse and domestic horse conflicts. This may impact permittees that are authorized to graze horses on public lands by limiting the areas of use to outside of HMAs.

In areas where allotments coincide with existing bighorn sheep populations, conversion of AUMs from domestic cattle to domestic sheep would only be allowed where conflicts could be mitigated (e.g., buffer zones). This may impact permittees that are authorized to graze domestic sheep on public lands by limiting the areas of use to portions of those allotments where bighorn sheep populations do not exist.

In areas where allotments coincide with potential bighorn sheep habitat, conversion of AUMs from domestic cattle to domestic sheep could be allowed; however, if bighorn sheep moved into the area, mitigation such as buffer zones could be implemented, impacting the acreage of grazing and AUMs available to the permittee.

Allowing for conversion between classes (not including domestic cattle to domestic sheep) and ages of livestock would allow flexibility for the permittee to efficiently use the allotments permitted to them.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Effects under Alternative A

There would be no net change in the lands available for livestock grazing or the assigned AUMs under Alternative A. Under Alternative A, forage banks would not be permitted. Forage banks are allotments where a previous permit has been relinquished or cancelled and could be used to provide alternate grazing opportunities for ranchers after wildfires, restoration projects and during droughts.

Not providing forage banks could take away an opportunity to help permittees continue to graze their livestock on public lands when their own allotment is closed due to an emergency situation, negatively impacting the permittees financially.

Allowing prescriptive grazing and temporary nonrenewable (TNR) grazing on acquired lands on a case-by-case basis provides an opportunity for ranchers to enhance their income and provide alternate forage for their cattle.

Permittees would be authorized to construct and maintain range improvement projects through issuance of cooperative agreements, which would allow for the continuance of grazing operations on public land.

Impacts on livestock grazing from allowing for conversion between classes (not including domestic cattle to domestic sheep) and ages of livestock would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D. Under Alternative A, where new waters are developed for livestock, the permittee would be required to provide water for wildlife only when livestock are present. This management action would not have any added financial impacts on the permittee.

Operator flexibility could be increased by permitting prescribed grazing within enclosure areas.

Effects under Alternative B

Alternative B allows for continued use of the public land for livestock grazing, with the same acreage and AUMs allotted as Alternative A. Impacts from using TNR and from constructing and maintaining range improvement projects also would be the same as under Alternative A.

Alternative B gives the permit holder the responsibility of approaching the BLM with an annual grazing plan, which would allow an opportunity for ranchers to expedite the process to expand their grazing business.

Adjusting grazing allotment boundaries would increase or decrease the amount of acreage within an allotment. An increase or decrease in acreage within an allotment could correspond to an increase or decrease in AUMs harvested, which could either benefit or impact a permittee financially. In addition, an increase in acreage could allow for more flexibility in the grazing rotation.

Impacts on livestock grazing from allowing for conversion between classes (not including domestic cattle to domestic sheep) and ages of livestock would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D. Under Alternative B, impacts on permittees developing new waters for livestock would be the same as identified under Alternative A.

Providing overflow ponds on range improvement projects would result in additional water storage, allowing the permittee more time to conduct repairs on the range improvement without running out

of water for livestock. However, overflow ponds can be a source of contaminated water to the livestock, as they tend to congregate and defecate within the pond area.

Under Alternative B, exclosures would be open to grazing unless site-specific allotment terms and conditions, objectives, and land health standards are not being achieved. This could allow the operator more flexibility in managing their livestock over a larger area.

Effects under Alternative C

Option 1

Under Alternative C, Option 1, 297,999 acres of livestock grazing would be closed.

Under Alternative C, Option 1, other resource values would be considered primary to livestock grazing. Therefore, livestock authorizations would only be issued if livestock grazing is found to be complimentary to other resource values. If livestock grazing is not found to be complimentary to other resource values, then no authorization would be issued, resulting in the same impacts as identified under Option 2 below.

Forage banks would be permitted under Alternative C, Option 1 under emergency situations (e.g., wildfire, drought, insect infestation, etc.). Providing forage banks for the permittees would allow them to continue to graze their livestock on public lands when their own allotment is closed due to an emergency situation, thus limiting financial impacts. Management responsibilities and priority usage could present conflicts, however, between livestock grazing permittees and the BLM.

Impacts on livestock grazing from retiring grazing permits would be the same as those under Alternative A.

Closing acquired lands to livestock grazing would prevent an opportunity for ranchers to expand their grazing business. Excluding TNR use would prevent an opportunity for ranchers to enhance their income and provide alternate forage for their cattle.

Permittees would be authorized to construct and maintain range improvement projects through issuance of cooperative agreements, which would allow grazing operations to continue on public land only if compatible with other resources and uses. If range improvements are not compatible with other resources and uses, they would be removed or modified. Removing or modifying range improvements could impact livestock grazing by reducing the amount of AUMs authorized due to resource impacts from concentrated livestock. Modifications to range improvements could have a financial implication to the permittee, depending on the type modification needed to make the project compatible with other resources and uses.

No more than two consecutive years of grazing use during the critical growing period would be allowed under Alternative C, Option 1. Utilizing key forage species would be maintained at 30 percent or less, which would limit the number of AUMs harvested by placing constraints on livestock numbers or use dates.

Impacts from adjusting grazing allotment boundaries would be the same as under Alternative B; however, a greater number of allotments have been identified for adjustment.

In areas where allotments coincide with potential habitat or existing bighorn sheep populations, Alternative C, Option 1 does not allow conversion from domestic cattle to domestic sheep. This may impact permittees that are authorized to graze domestic sheep on public lands by limiting the areas of use for grazing to those allotments that do not have potential bighorn sheep habitat or existing bighorn sheep populations.

Conversion from domestic sheep to cattle would be promoted under Alternative C, Option 1 in order to endorse bighorn sheep population and to increase their habitat range throughout the WD.

Under Alternative C, Option 1, where new waters are developed for livestock in big game habitat or HMAs, the permittee would be required to provide water for wildlife and WHB even when livestock are not present. This management action could financially impact permittees by requiring them to maintain water at the site, even when livestock are not allowed during a specific season of use.

Overflow ponds would not be developed under Alternative C, Option 1. If range improvements malfunction and overflow ponds are not present, livestock would be forced to find an alternate source of water until such repairs could be made.

Closing all enclosure areas to livestock grazing could reduce the amount of flexibility a permittee has in managing his livestock; however, it could allow the permittee to achieve allotment-specific objectives without intensive livestock management (e.g., herding).

Option 2

Livestock grazing on public land is an important source of income to ranchers in Nevada. As identified in the Winnemucca RMP/EIS Socioeconomic Report (BLM 2006c), cattle and calf production in Nevada has remained relatively stable, ranging from 152,915,000 pounds in 1994 to 171,335,000 pounds in 2003. Gross income has increased over time from \$132,388,000 in 1994 to \$185,205,000 in 2003 and is expected to continue.

The BLM manages grazing on public lands by issuing grazing permits. Approximately 12 percent of the fees collected from grazing permits are returned to the state of Nevada (BLM 2006c). In addition, Congress appropriates funds for payments in lieu of taxes to eligible local governments each year as income generated from the use of public land for livestock grazing. Eliminating livestock grazing on public lands would impair the livelihood of ranchers in the WD and would decrease associated revenue to state and local governments.

Eliminating grazing on public lands could reduce erosion caused by high livestock use, improving upland, riparian and wetland habitat at a faster rate. Conflicts between livestock and wild horses, burros, and wildlife would be eliminated. However, eliminating grazing would allow vegetation to build up faster on rangelands and increase the chances of overgrown vegetation becoming more susceptible to fire and disease.

Range improvements that are not compatible with other resources and uses would be removed. BLM would be required to compensate the permittees for the range improvement projects constructed under a cooperative agreement in accordance with 43 CFR 4120.3-6 (c).

Effects under Alternative D

Under Alternative D, 319,328 acres of livestock grazing would be closed. Impacts on livestock grazing from implementing forage bank usage would be the same as under Alternative C, Option 1.

The impacts from allowing prescriptive grazing on acquired lands would be the same as those identified under Alternative A; however, after an implementation plan is developed, the available AUMs may become a permanent part of a permit, or livestock grazing could be excluded based on other resource concerns or priorities. Excluding grazing would have a financial impact on a permittee, as identified under Alternative C, Option 1.

Impacts on livestock grazing from allowing TNR applications would be contingent on meeting specific criteria. If the criteria are met, TNR would be authorized and impacts would be the same as under Alternatives A and B. If criteria are not met, BLM would have to undertake NEPA in order to implement TNR. The outcome of NEPA could prevent the approval of TNR in situations where other resources would be impacted, thereby preventing an opportunity to provide alternative forage for livestock and enhance a permittee's income.

Permittees with a good record of past project maintenance would be authorized to construct and maintain range improvement projects through issuance of cooperative agreements, which would allow for the continuance of grazing operations on public land. Permittees with a poor record would have to maintain existing projects to bureau specifications prior to any new projects being authorized, which could have a high financial impact on permittees at one time as opposed to smaller maintenance costs over a longer period of time.

No more than three consecutive years of grazing use during the critical growing period would be allowed under Alternative D. Utilization of key forage species would be maintained at 40 percent or less, which would limit the number of AUMs harvested by placing constraints on livestock numbers or use dates.

Impacts from adjusting grazing allotment boundaries would be the same as under Alternative B; however, a greater number of allotments have been identified for adjustment.

Impacts on livestock grazing from allowing for conversion between classes (not including domestic cattle to domestic sheep) and ages of livestock would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Under Alternative D, impacts on permittees developing new water sources in big game habitat and HMAs for livestock would be the same as Alternative C, Option 1.

Under Alternative D, overflow ponds would not be permitted on surface water sources such as springs or creeks, which would have the same impact on livestock grazing as Alternative C, Option 1. On sites with water wells overflow ponds would be encouraged, which would have the same impact on livestock grazing as Alternative B.

Permitting prescribed grazing within enclosure areas would impact livestock grazing the same as Alternative A.

Livestock Grazing: Effects from Minerals Management***Effects Common to Alternatives A, B, C (Option 1), and D******General***

The majority of mineral development within the Winnemucca District centers on locatable minerals, saleable, fluid minerals (geothermal), and solid minerals leasing. Mineral development generally includes an exploration phase and a production phase that varies depending on the resource being developed. Exploration activities most often include: construction of roads, drill pads, and trenching. Production operations include the development of the production infrastructure, roads, and supporting utility access. Mining and processing may include mine pits, heap leach pads, waste dumps, tailing impoundments, power substations, and pipelines. Fluid mineral production would include development of well fields, production pipe systems, and, in most cases, either a tank farm for oil and gas, or a power plant or direct use facility for geothermal resources.

Impacts on non-mineral resources are dependent on the size of disturbance and the type of mineral development. Usually, locatable mines have larger disturbance footprints. The amount of mining activity that occurs is dependent on the price of mineral commodities. Higher mineral prices are usually reflected by an increase in the number and scope of mineral related activities. A direct impact to livestock grazing from mineral development includes removal of vegetation that livestock utilize for forage. These impacts are dependent on the size, number and location of disturbed areas. Mineral development can also impact access to areas where livestock have historically grazed as a result of fencing areas. Dewatering of mine pits can affect the quantity of water available to livestock. These impacts include drying up of water sources through mine pit dewatering.

Exploration drilling could also affect surface water flows near springs. In a number of instances mining companies work with grazing permittees to provide alternate water sources for livestock that have been impacted due to mining. Most direct impacts on livestock grazing are addressed through site specific permit stipulations or mitigation measures that reduce the potential of adverse impacts. Indirect impacts related to mineral development include the potential to improve rangelands disturbed and vegetation conditions by implementing actions to reclaim and seed disturbed areas. Availability of rangeland forage may improve over time as reclamation of areas stabilizes. Under the no livestock grazing applicable to Alternative C, Option 2, there would be no impacts on livestock grazing from mineral development.

Saleable

There are few impacts on livestock grazing acreage due to mineral material sales and issuance of permits. Impacts would include removal of vegetation necessary for livestock forage in order to construct new pits or expand existing gravel pits. These impacts are minimal due to relative small disturbance footprints of gravel pits and the demand for gravel is being met through existing pits at this time. Reclaimed gravel pits may offer improved vegetation conditions in areas.

Fluid

Impacts from fluid mineral development would be largely related to exploration and utilization of geothermal resources. Those impacts include construction of roads, drill pads, pipelines, geothermal

power plant infrastructure, electrical substations and power lines tying into the power grid. Based on the reasonable foreseeable development scenario about 1,600 acres of new surface disturbance would be generated from exploration activities and the construction of new geothermal power plants based on the life of this plan. Minimal impacts on livestock grazing would occur from loss of forage. Exploration drilling near areas containing surface expressions could affect water availability for livestock. Site specific permitting requirements and implementation of mitigation measures should reduce the potential for adverse impacts on springs. Interim reclamation of disturbed areas would re-establish vegetation in areas. About 250 acres of surface disturbance would result from oil and gas exploration. Impacts are expected to remain minimal due to the limited potential for oil and gas development within the District.

Solid

Few impacts would occur to livestock grazing from solid mineral development. Impacts would be dependent on the location, number, and size of disturbance created for infrastructure developed and if areas are fenced. Impacts generally would be minimal and would be addressed through issuance of site specific NEPA analysis and permit requirements. Reclamation of areas should improve vegetative conditions in the long term as reclaimed areas stabilize and re-vegetate.

Locatable

There would be little difference in impacts between alternatives from locatable mineral development relating to livestock grazing. To date, about 38,000 acres of public land have been affected from locatable mining operations, excluding exploration. Impacts on livestock grazing include; loss of forage, access restrictions to forage and loss of water supply due to access restrictions, mine pit dewatering, and drilling. These impacts are generally addressed through site specific permitting and NEPA analysis. Permit requirements or mitigation measures implemented include the development of alternative water sources for livestock. In some cases providing off site alternative water supplies have opened new areas for livestock grazing not previously utilized. In the long term, mine and exploration reclamation may improve vegetation conditions allowing for sustainable livestock forage once reclamation of sites has established and stabilized.

Approximately 96 to 99 percent of available livestock grazing acreage would be open to locatable mineral development under all of the alternatives, and impacts on livestock grazing would be the same for all alternatives and are identified under General impacts, above.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Effects under Alternative A

Saleable

Ninety-four percent of available livestock grazing acreage would be open to mineral material sales under Alternatives A, representing the greatest impact on livestock grazing.

Fluid

Ninety-three percent of available livestock grazing acreage would be open to fluid mineral leasing under Alternative A, representing the greatest impact on livestock grazing.

Solid

Ninety-four percent of available livestock grazing acreage would be open to solid mineral leasing under Alternative A, representing the greatest impact on livestock grazing.

Effects under Alternative B***Saleable***

Impacts would be the same as identified under Alternative A.

Fluid

Eighty-four percent of available livestock grazing acreage would be open to fluid mineral leasing under Alternative B. Impacts on livestock grazing would be similar to but less than under Alternative A.

Solid

Eighty-four percent of available livestock grazing acreage would be open to solid mineral leasing under Alternative B. Impacts on livestock grazing would be similar to but less than under Alternative A.

Effects under Alternative C***Option 1******Saleable***

The greatest amount of acreage closed to saleable disposal would be under Alternative C, Option 1, so the least amount of impacts would occur under Alternative C, Option 1.

Fluid

Under Alternative C, Option 1, 38 percent of available livestock grazing acreage would be open to fluid mineral leasing and would represent the least amount of impacts on livestock grazing.

Solid

Under Alternative C, Option 1, 38 percent of available livestock grazing acreage would be open to solid mineral leasing and would represent the least amount of impacts on livestock grazing.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from mineral resources management.

Effects under Alternative D***Saleable***

Under Alternative D, 90 percent of available livestock grazing acreage would be open to mineral material sales. Impacts on livestock grazing would be similar to but less than Alternative A.

Fluid

Eighty-four percent of available livestock grazing acreage would be open to fluid mineral leasing under Alternative D. Impacts on livestock grazing would be similar to but less than Alternative A.

Solid

Eighty-four percent of available livestock grazing acreage would be open to solid mineral leasing under Alternative D. Impacts on livestock grazing would be similar to but less than Alternative A.

Livestock Grazing: Effects from Recreation, Visitor Outreach, and Services Management

Table 4-44 displays OHV designations within grazing allotments by alternative.

Table 4-44
OHV Designations within Grazing Allotments

OHV Designation	Alternative A (acres)	Alternative B (acres)	Alternative C (Option 1) (acres)	Alternative C (Option 2) (acres)	Alternative D (acres)
Open	6,782,790	1,460,200	0	0	288,105
Limited	416,652	5,445,218	7,143,177	0	6,862,682
Closed	24,832	24,832	61,427	0	28,354
Total	7,224,274	6,930,250	7,204,604	0	7,179,141

Source: BLM 2011

Effects Common to Alternatives A, B, C (Option 1), and D

Short-term impacts of recreation activities on livestock grazing include loss of forage and temporary displacement of livestock. Long-term impacts of recreation on livestock include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment caused by increased levels of human activities. SRMAs that manage for increased OHV use and access would increase the impacts stated above. SRMAs that manage for a more primitive recreational experience would decrease the impacts stated above. Areas that are limited or closed to OHV use under any of the alternatives can impact livestock grazing by limiting the permittee's use of OHVs, which are often used to herd and check on cattle. Any development of reservoir sites for water-based recreation could potentially provide an additional source of water for livestock.

Effects under Alternative A

Approximately one percent (98,874 acres) of the 8,232,727 acres of available grazing areas would be located in SRMAs under Alternative A. Impacts on livestock grazing would be localized to the Alder Creek, Dyke Hot, Knott Creek, and Pine Forest Allotments, which are being managed for a

primitive type of recreation that has minimal impacts on livestock grazing. Alternative A would have the fewest impacts on livestock grazing from SRMA management.

Under Alternative A, 94 percent (6,216,854 acres) of available grazing areas would continue to be designated as open to OHV use (Table 4-44, OHV Designations within Grazing Allotments). Increased demand for OHV use could impact livestock grazing by increasing human-caused noise, dust, and vegetation disturbance and by allowing greater opportunity for the harassment of grazing animals.

Effects under Alternative B

Approximately 14 percent (1,174,952 acres) of the 8,232,727 acres of available grazing areas would be located in SRMAs, a 13 percent increase from Alternative A. The Winnemucca SRMA would provide for the greatest amount of conflict between livestock grazing and recreational activities, so Alternatives B and D would have the greatest impacts on livestock grazing.

Under Alternative B, 20 percent (1,276,227 acres) of available grazing acres would be designated as open to OHV use (Table 4-44, OHV Designations within Grazing Allotments). Under Alternative B, 74 percent of available grazing areas would be changed from open to limited or closed. Changing motorized vehicle use areas from an open to a limited or closed designation would affect livestock grazing by reducing multiple uses on grazing allotments, thus reducing conflicts from such multiple uses (such as displacement and harassment of livestock). Changing motorized vehicle use areas from an open to a limited OHV use, however, could impact permittees that use OHVs to herd cattle. Changing motorized vehicle use areas from an open or limited designation to a closed designation could impact permittees that use OHVs to herd and check on cattle. Action B-R 10.3, does, however allow for exceptions on OHV use during emergencies and ranching-related maintenance on a case-by-case basis, which could lessen the impacts from changing OHV designations from open to limited or closed.

Effects under Alternative C

Option 1

Approximately 3 percent (250,572 acres) of the 8,038,084 acres of available grazing areas would be located in SRMAs, a three percent increase from Alternative A. Impacts on livestock grazing are greater than under Alternative A but less than under Alternatives B and D.

Under Alternative C, Option 1, no available grazing areas would be designated as open to OHV use (Table 4-44, OHV Designations within Grazing Allotments). Under Alternative C, Option 1, 90 percent of available grazing areas would be changed from open to limited or closed. Changing motorized vehicle use areas from an open to a limited or closed designation would affect livestock grazing by reducing multiple uses on grazing allotments, thus reducing conflicts from multiple uses such as displacement and harassment of livestock. Action C-R 10.3 would impact livestock grazing the same as identified under Alternative B. Alternative C (Option 1) would have the fewest impacts on livestock grazing from OHV use.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from recreation management.

Effects under Alternative D

Approximately 15 percent (1,174,952 acres) of the 7,903,856 acres of available grazing areas would be located in SRMAs, a 14 percent increase from Alternative A. The impacts on livestock grazing would be the same as Alternative B.

Under Alternative D, four percent (273,793 acres) of available grazing areas would be designated as open to OHV use (Table 4-44, OHV Designations within Grazing Allotments) and 95 percent would be limited to OHV use. Action D-R 10.3 would impact livestock grazing in a manner similar to that identified under Alternative B. Impacts on livestock grazing would be less than under Alternative A.

Livestock Grazing: Effects from Renewable Energy Management

Effects Common to Alternatives A, B, C (Option 1), and D

Renewable energy development affects areas of grazing in the short term during construction of access roads and facilities (such as wind turbines, solar panels, and biomass plants). Impacts include temporary loss of forage, reduced forage palatability because of dust on vegetation, and temporary harassment and displacement of livestock. In the long term, a smaller amount of permanent grazing acreage would be lost, depending on the size of these operations.

Effects under Alternative A

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative B

No exclusion zones would be designated under Alternative B, allowing for the greatest amount of renewable energy development and the greatest amount of impacts (as identified above under Effects Common to All Alternatives) to livestock grazing.

Effects under Alternative C

Option 1

The greatest amount of acreage would be excluded from ROW development under Alternative C, Option 1, which would present the least amount of renewable energy development and impacts (as identified above under Effects Common to All Alternatives) to livestock grazing.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from renewable energy management.

Effects under Alternative D

Limiting exclusion zones to 1,199,539 acres within the WD would impact livestock grazing less than Alternative B, but slightly more than Alternative C, Option 1.

Livestock Grazing: Effects from Transportation and Travel Management

Effects Common to Alternatives A, B, C (Option 1), and D

In general transportation routes provide better access for permittees and allow for expedited checking and moving of livestock. The cattle also use transportation routes to move from pasture to pasture. Short-term impacts of road construction and temporary road closures include loss of forage, temporary harassment displacement of livestock, and preventing permittees from accessing their cattle in a timely fashion. Long-term direct and indirect impacts on cattle from newly developed transportation routes include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment cause by increased levels of human activities.

Effects under Alternative A

Decommissioning roads from the system inventory could directly impact permittees' access to their livestock.

Effects under Alternative B

Impacts would be the same as under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative C

Option 1

Decommissioning roads from the system inventory could directly impact permittees' access to their livestock. This effect could be amplified in areas closed to OHV use.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from transportation and travel management.

Effects under Alternative D

Decommissioning roads from the system inventory would directly and indirectly impact livestock grazing the same as identified under Alternative C, Option 1.

Livestock Grazing: Effects from Lands and Realty Management

Table 4-45 displays land tenure actions proposed under all alternatives within available grazing allotments.

Table 4-45
Land Tenure within Grazing Allotments

Realty Action	Alternative A (acres)	Alternative B (acres)	Alternative C (Option 1) (acres)	Alternative C (Option 2) (acres)	Alternative D (acres)
Retention Areas	5,135,658	6,298,689	6,997,859	0	6,923,708
Disposal Areas (% of allotments Available for disposal)	2,663,082 (32%)	1,934,038 (23 %)	1,040,225 (13 %)	0	1,093,046 (14%)

Source: BLM 2011

Effects Common to Alternatives A, B, C (Option 1), and D

Short-term impacts from site-specific lands and realty actions, such as construction of power lines, pipelines, and other construction activities within ROWs, include the temporary removal of forage and displacement of livestock. Long-term impacts on livestock from site-specific lands and realty actions include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment from increased levels of human activities.

Permanent losses of forage and range improvement projects (RIPs) would occur as a result of land disposals or exchanges. BLM would be required to notify the permittee 2 years prior to any land disposal (43 CFR 4110.4-2 (b)), except in an emergency situation, and to compensate the permittees for the range improvement projects constructed under a cooperative agreement in accordance with 43 CFR 4120.3-6 (c).

Loss of AUMs could occur where large blocks of land are either disposed to the public or the land exchange is not in the same area as the allotment losing the land.

Any land that is acquired could only be grazed prescriptively until such time as an implementation plan is implemented, which could increase permittee flexibility. If grazing is determined to be a suitable use for the acquired land, AUMs could be added to the permit, thereby increasing the amount of forage available for harvest.

In addition to the impacts identified under Effects Common to Alternatives A, B, C (Option 1), and D, the following individual effects would impact livestock grazing.

Effects under Alternative A

Table 4-45 displays land tenure actions proposed under all alternatives within available grazing allotments. Approximately 32 percent (2,663,082 acres) of available grazing allotments would be available for disposal or exchange under Alternative A. Impacts on livestock grazing would be the same as under Effects Common to All Alternatives, above. The greatest acreage available for disposal is identified under Alternative A, presenting the greatest impact on livestock grazing.

Effects under Alternative B

Approximately 23 percent (1,934,038 acres) of available grazing allotments would be available for disposal or exchange (Table 4-45, Land Tenure within Grazing Allotments) under Alternative B. Impacts would be less than under Alternative A but greater than Alternatives C, Option 1 or D.

No exclusion zones would be designated under Alternative B, allowing for the greatest amount of ROW development and the greatest amount of impacts (as identified above under Effects Common to Alternatives A, B, C [Option 1], and D) on livestock grazing.

Effects under Alternative C***Option 1***

Approximately 13 percent (1,040,225 acres) of available grazing allotments would be available for disposal or exchange (Table 4-45, Land Tenure within Grazing Allotments) under Alternative C, Option 1. Impacts from disposal actions would be less than under Alternatives A or B and the same as under Alternative D.

Transferring the land identified in Action C-LR 3.2. to the BIA would reduce the amount of public lands within the Fort McDermitt grazing allotment; however, the permit is controlled by the Fort McDermitt Grazing Association, and it is assumed that the loss of these lands would not have a large impact as they could continue to graze on BIA land.

The greatest amount of acreage would be excluded from ROW development under Alternative C, Option 1, which would present the least amount of impacts (as identified above under Effects Common to Alternatives A, B, C [Option 1], and D) on livestock grazing.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from lands and realty management.

Effects under Alternative D

Approximately 13 percent (1,093,046 acres) of available grazing allotments would be available for disposal or exchange (Table 4-45, Land Tenure within Grazing Allotments). Impacts from land disposals would be less than under Alternatives A or B and the same as under Alternative C, Option 1. Transferring the land identified in Action D-LR 3.2. to the BIA would impact livestock grazing the same as identified under Alternative C, Option 1.

Limiting exclusion zones to 1,199,539 acres within the WD would impact livestock grazing less than under Alternative B but slightly more than under Alternative C, Option 1.

Livestock Grazing: Effects from ACEC/RNA Management**Effects Common to Alternatives A, B, C (Option 1), and D**

Grazing would continue to be allowed within the Osgood Mountains ACEC under all alternatives. No impacts would occur.

Effects under Alternative A

Impacts would be the same as those under Effects Common to All Alternatives.

Effects under Alternative B

Impacts would be the same as those under Effects Common to All Alternatives.

Effects under Alternative C

Option 1

Three new ACECs would fall within nine grazing allotments (87,425 acres) under Alternative C, Option 1. If monitoring were to show that a use such as livestock grazing was not compatible with the ACEC objectives, then livestock grazing could directly be impacted by dictating where range improvements could be constructed.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from ACEC/RNA Management.

Effects under Alternative D

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Livestock Grazing: Effects from Backcountry Byways Management

Effects Common to Alternatives A, B, C (Option 1), and D

Short-term direct and indirect impacts of developing new BCBs could include loss of forage and temporary displacement of livestock. Long-term impacts on cattle from newly developed BCB routes include loss of forage and reduced forage palatability because of dust on vegetation. However, livestock and livestock operators could use BCBs as access routes within or between allotments. The greatest impact on livestock grazing would be increased disturbance and harassment caused by increased levels of visitor use of the routes.

Effects under Alternative A

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative B

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative C

Option 1

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from BCB management.

Effects under Alternative D

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Livestock Grazing: Effects from National Historic Trails Management

Effects Common to Alternatives A, B, C (Option 1), and D

Effects would be the same as those described under Effects from Cultural Resources Management, above.

Effects under Alternative A

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative B

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative C

Option 1

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from National Historic Trails Management.

Effects under Alternative D

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Livestock Grazing: Effects from Wild and Scenic Rivers Management

Effects Common to Alternatives A, B, C (Option 1), and D

There would be no effects common to all alternatives from WSR management.

Effects under Alternative A

Under Alternative A, eligible river corridors would be given protection either through continued interim protective management or the development of Comprehensive River Management Plans. This would provide additional measures within the 13,583 acres of WSR corridors that would promote riparian habitat and wetland health and functionality. While this could lead to restriction on grazing activities or changes to grazing management practices, this would only occur if grazing practices began to cause degradation compared to the conditions that existed when NWSRS eligibility was determined.

Effects under Alternative B

There would be no impacts on livestock grazing from WSR management under Alternative B.

Effects under Alternative C

Option 1

The effects from WSR management on livestock grazing Under Alternative C, Option 1, would be the same as those described under Alternative A.

Option 2

Under this alternative, there would be no grazing therefore WSR management would have no effect on livestock grazing.

Effects under Alternative D

Under this alternative, there likely would be no impacts on livestock grazing from WSR management as long as WSA, priority habitat, and priority watershed management, as outlined in the remainder of the RMP, are implemented. In the case that these management actions are not implemented or are removed after implementation, interim protective management measures would be implemented within the 13,583 acres of eligible WSR corridors, which would have effects identical to those described under Alternatives A and C (Option 1) until a new determination of NWSRS suitability is made.

Livestock Grazing: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to Alternatives A, B, C (Option 1), and D

Managing Wilderness Areas and WSAs would result in direct and indirect effects on livestock grazing. In general, the protections afforded to these areas, such as restrictions on surface-disturbing and other disruptive activities, would reduce harassment of grazing animals and help maintain and

improve vegetation conditions, thereby maintaining or improving the forage base for livestock. Protections afforded to these areas, however, limit the types of access by permittees (such as no OHV use and road closures). In addition, more restrictions are placed on maintaining existing range improvement projects, and new range improvement projects are limited to those that would enhance the wilderness values.

There are 824,950 acres of grazing allotments within the NCA Wilderness Areas. There are 412,710 acres of grazing allotments within WSAs for all alternatives.

Effects under Alternative A

Impacts from wilderness and wilderness study area management on livestock grazing would be the same as those identified under Effects Common to Alternatives A, B, C (Option 1), and D.

Specific management measures are not identified for any areas containing wilderness characteristics under Alternative A, so there would not be any impacts on livestock grazing.

Effects under Alternative B

Impacts from wilderness and wilderness study area management would be the same as those identified under Alternative A.

Effects under Alternative C

Option 1

Impacts on livestock grazing from Wilderness and Wilderness Study Area management actions would be the same as those identified under Effects Common to Alternatives A, B, C (Option 1), and D.

Implementing specific protection measures to the six areas identified as containing wilderness characteristics would result in direct and indirect effects on livestock grazing. In general, the exclusions on mining and ROW development would help maintain and improve vegetation conditions, thereby maintaining or improving the forage base for livestock. However, protections afforded to these areas may place restrictions on maintaining or developing new range improvement projects, placing an extra burden on the permittees in these specific allotments. There are nine grazing allotments that fall within the six areas identified as having wilderness characteristics. The acreage of each grazing allotment that would be affected by the special management allotted each wilderness characteristic area is as follows:

- Blue Wing-Seven Troughs Allotment-71,338 acres (17%);
- Buffalo Hills Allotment-58,150 (13%);
- Goldbanks Allotment-3,304 acres (14%);
- Jersey Valley Allotment-497 acres (2%);
- Leadville Allotment-7,942 acres (15%);
- Pleasant Valley Allotment-21,332 (19%);

- Pumpnickel Allotment-3,062 acres (8%);
- Rawhide Allotment-7,165 acres (14%); and
- South Rochester Allotment-5,376 acres (10%).

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from wilderness, wilderness study, and wilderness characteristic area management.

Effects under Alternative D

The impacts on livestock grazing from Wilderness and Wilderness Study Area management actions would be the same as those identified under Effects Common to Alternatives A, B, C (Option 1), and D.

Wilderness Characteristic management actions would impact livestock grazing similarly to those identified under Alternative C, but less acreage would be excluded from mining and ROW development as proposed under other resource management actions.

Livestock Grazing: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to Alternatives A, B, C (Option 1), and D

In general, watchable wildlife viewing (WWV) sites would not impact livestock grazing practices. Establishing new WWVs could bring more people to areas where livestock grazing occurs, which could indirectly increase harassment of livestock and degradation of livestock forage through trampling.

Effects under Alternative A

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative B

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative C

Option 1

Impacts would be slightly less than under Effects Common to Alternatives A, B, C (Option 1), and D because Action C-WWV 1.1 would manage the area by trying to avoid increasing traffic to remote areas.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from watchable wildlife viewing sites management.

Effects under Alternative D

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Livestock Grazing: Effects from Public Health and Safety Management

Effects Common to Alternatives A, B, C (Option 1) and D

Cleaning up newly discovered dump sites could temporarily impact livestock grazing by fencing off part of an allotment during cleanup and restoration of that site. Actions to correct and clean up hazards and to protect closed sites would also help protect livestock from possible injury or contamination and would improve the vegetative conditions in the long term within those sites.

Effects under Alternative A

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative B

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Effects under Alternative C

Option 1

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from public health and safety management.

Effects under Alternative D

Impacts would be the same as those under Effects Common to Alternatives A, B, C (Option 1), and D.

Livestock Grazing: Effects from Sustainable Development Management

Effects Common Alternatives A, B, C (Option 1) and D.

There would be no common effects on livestock grazing under Alternatives A, B, C (Option 1), and D.

Effects under Alternative A

Sustainable development is not addressed under Alternative A; therefore, no impacts would be anticipated to occur.

Effects under Alternative B

Permanent losses of forage and range improvement projects (RIPs) could occur as a result of land disposals or exchanges. BLM would be required to notify the permittee two years prior to any land disposal (43 CFR 4110.4-2 (b)), except in an emergency situation, and to compensate the permittees for the range improvement projects constructed under a cooperative agreement in accordance with 43 CFR 4120.3-6 (c).

Loss of AUMs could occur where large blocks of land are either disposed to the public or the land exchange is not in the same area as the allotment losing the land.

Short-term impacts from issuances of ROW include the temporary removal of forage and displacement of livestock. Long-term direct and indirect impacts on livestock from site-specific lands and realty actions include loss of forage, reduced forage palatability because of dust on vegetation, and disturbance and harassment from increased levels of human activities.

Effects under Alternative C

Option 1

Impacts on livestock grazing from land disposals and issuances of ROWs would be the same as identified under Alternative B.

Option 2

Since there is no livestock grazing under Alternative C, Option 2, there would be no impacts on livestock grazing from sustainable development management.

Effects under Alternative D

Impacts on livestock grazing from land disposals and issuances of ROWs would be the same as identified under Alternative B.

Livestock Grazing: Cumulative Effects

Past and Present Actions

Past and present impacts, resulting from livestock grazing, were and still are dependent on the degree or intensity of livestock grazing. From 1982 to the present, current land use plans have employed management strategies to reduce concentrated grazing through maintaining standards for rangeland health and permit requirements. Availability of forage for livestock grazing and number of authorized AUMs from fluctuated up and down due to adjustments based on monitoring data and from temporary closures necessitated by insect outbreaks, fire and drought. Minerals, lands and realty, and renewable energy developments have contributed few impacts on grazing. Many of these impacts relate to rangelands being fenced in order to protect infrastructure, resulting in reduced availability of forage. However, few if any adjustments to AUMs have resulted from fencing. In some cases grazing of rangelands has been improved due to installation of range improvements by mining companies. Recreation impacts have affected grazing management within allotments due to gates being left open or vandalism of range improvements. Management of sensitive species habitat has limited the degree or intensity of grazing in areas containing special status species habitat. WHB

compete with livestock for forage limiting forage availability for livestock in HMAs where AMLs are exceeded. However, these impacts have stabilized through WHB management such as horse gathers. Wildfire has removed forage available for livestock grazing. Impacts have varied based on the size and intensity of wildfires. Emergency stabilization and rehabilitation treatments have helped restore forage for livestock over time.

Reasonably Foreseeable Actions

Impacts would be similar to the past and present actions. No livestock grazing would reduce the availability of livestock forage and increase costs to livestock operators, in many cases driving them out of business. Increasing minerals, lands and realty, and renewable energy developments would restrict livestock grazing access to rangelands due to fencing installed to protect property and infrastructure. Large landscape scale fuels management projects would to protect or reduce fire size or spread, and reduce the number of acres burned.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Incremental cumulative impacts would be similar for all alternatives. Overall, incremental impacts would vary based on permit requirements, use restrictions and the size and number of minerals and renewable energy developments and construction associated with ROW and communication site authorizations. Larger facilities would fence off areas to livestock grazing. Continued WHB management would ensure forage is available. ES&R treatments would slowly restore forage over time post fire. Overall incremental impacts would remain moderate.

4.3.2 Minerals—Leasable, Locatable, and Saleable

Summary

Mineral resources include fluid and solid minerals leased for development under the Mineral Leasing Act of 1920 and amendments, as well as the Geothermal Steam Act of 1970, locatable minerals that may be claimed and patented under the 1872 Mining Law, and common variety materials that may be purchased under the Mineral Materials Sales Act of 1947.

Development of the various alternatives involved the identification of BLM-administered land that is open or closed, including segregated and withdrawn, to saleable, leasable, and locatable mineral activities. On BLM land open to leasing or mineral development, certain areas may be subject to surface use stipulations in addition to those required by regulation or policy or identified on the standard lease or permit form. These additional restrictions could include NSO and restrictions based on season or other location-specific environmental factors. In many instances, more than one stipulation may apply on the same parcel of land. Table 4-46 indicates the difference among the alternatives in terms of the level of mineral resource availability and surface use restrictions on subsequent operations.

Almost all of the management decisions and actions under each alternative are aimed at protecting other resources. In general, these decisions and actions result in varying amounts of land available for each of type of mineral resource category detailed below. They also result in varying types and

Table 4-46
Summary of Effects on Minerals—Alternatives A, B, C, and D

Mineral Materials (Saleables)	Alternative A	Alternative B	Alternative C	Alternative D
Acres closed to mineral material sale or permit	418,938	418,938	837,049	694,991
Total Acres open to mineral material sale of some type	6,786,059	6,786,059	6,367,789	6,539,184
Acres open to sale/permit ¹	0	4,473,691	2,746,668	2,871,026
Acres open to sale/permit ¹ with known seasonal or other restrictions	6,786,059	1,445,244	0	2,390,415
Acres open to permitted government agencies only	0	867,124	3,621,121	1,277,700
Leasable Minerals (Fluid)	Alternative A	Alternative B	Alternative C	Alternative D
Acres closed to leasing	446,887	1,132,594	4,455,028	1,740,928
Acres open to leasing of any type	6,745,878	6,068,969	2,749,810	5,492,707
Acres open to leasing ²	0	4,472,814	2,749,810	2,851,895
Acres open to leasing ² plus known seasonal or other restrictions	6,716,296	1,374,731	0	2,435,327
Acres open to leasing with No Surface Occupancy	29,582	221,724	0	205,485
Leasable Minerals (Solid)	Alternative A	Alternative B	Alternative C	Alternative D
Acres closed to leasing	416,652	1,124,266	4,455,645	1,740,930
Acres open to leasing of any type	6,776,198	6,068,498	2,749,195	5,492,706
Acres open to leasing ²	0	4,472,950	2,749,195	2,851,895
Acres open to leasing ² plus known seasonal or other restriction	6,776,198	1,373,904	0	2,435,326
Acres open to leasing with No Surface Occupancy	0	221,644	0	205,485
Locatable Minerals	Alternative A	Alternative B	Alternative C	Alternative D
Acres withdrawn from claim location	6,543	6,543	281,892	7,296
Acres open to claim location	7,198,294	7,198,294	6,922,945	7,249,045
Acres open to operations ¹	2,898,405	2,898,405	3,415,323	2,692,419
Acres open to operations but having known conflicts ³	4,299,889	4,299,889	3,507,622	4,556,626

Source: Based on alternative management actions as presented in Chapter 2

¹Open with standard operation terms and stipulations.

²Open with standard lease terms and stipulations.

³Operations may be authorized, but one or more known conflicts may require special conditions or mitigating measures.

Notes: GIS data are presented for landscape level planning purposes to illustrate broad differences among the alternatives. The data presented in the Draft EIS (May 2010) were based on land status designations and mapping current at the time of publication. The data for Alternative D in this Final EIS include the BLM's most current land status designations and mapping, in order to provide up to date impact analysis of the Proposed RMP. The changes in the GIS land status layer that occurred over time were corrections to the layer arising from evolving GIS technologies and increased data available in GIS. The data presented here for Alternatives A through C, are substantially the same as presented in the Draft EIS, with minor corrections and changes in assumptions due to public comments. The accuracy of the GIS data is limited to the accuracy of the data available at the time of analysis. This data should not be interpreted to represent legal land survey. Because land status designations change over time, the accuracy of these data is expected to decrease over time. Parties interested in the land status of specific parcels of land should contact the appropriate local BLM Field Office.

levels of mitigation required for protection of sensitive environmental resources. The costs associated with reclamation and other mitigations could affect whether individuals or organizations continue mineral exploration and development activities. Other goals and actions involve frequency and types of audits and inspection of activities related to mineral development to ensure permit compliance and fair compensation for the minerals extracted.

Saleable Minerals: The alternatives would affect saleable mineral disposals by various limits on the amount of land available for disposal sites and the areas open with restrictions, as well as limits on operations. The value of most saleable minerals is closely tied to the proximity of the source to the final place of use. Closing lands to sale of material would result in loss of revenue to the Treasury from the minerals contained there. It may also raise the cost to developers because they would have to rely on resources from private lands or from public lands at a greater distance, either of which may be more expensive. Closing land to all forms of disposal would also impair the ability of various levels of government to use nearby materials at no cost for the benefit of public projects. The most common of such projects are the creation or maintenance of rural roads.

Leasable Minerals: While solid leasable minerals are present within the planning area, no significant production of these minerals is underway or anticipated. Fluid leasable minerals (i.e., geothermal resources, oil, and gas) are or may be found in commercially exploitable deposits in the WD.

The impact issues for fluid minerals result from management decisions for the protection of other resources. Constraints related to the fluid mineral leasing, exploration, and development include exclusion areas, buffer zones around sensitive areas, seasonal constraints, and conditions of approval. The alternatives would affect fluid mineral development by varying the amounts of land available for leasing and the lease terms and stipulations to be applied on any given tract of land. Closing lands to development would result in reduced domestic production of the US mineral needs and higher dependence on foreign sources of those minerals, reduced economic development on the regional and local levels, loss of royalty revenues from the lands' minerals, and loss of tax revenue to all levels of government.

Locatable Minerals: The alternatives would affect locatable mineral exploration and development by varying the amount of land

- open to the operation of the mining laws
- open with identified resource conflicts resulting in restrictions on proposed operations, or
- open with no previously known resource conflicts, for each alternative.

The restrictions are not applied to mining claims themselves but to operational proposals (a notice or plan of operations) submitted for exploration or development of locatable minerals. Closing, segregating, or withdrawing lands to claim and subsequent development would reduce domestic production of our mineral needs and higher dependence on foreign sources of those minerals, reduced economic development on the regional and local levels, and loss of tax revenues to all levels of government that would have resulted from the development of the encompassed minerals.

Methods of Analysis

Methods and Assumptions

The analysis of potential impacts is based on a review of literature, geologic maps, and information provided by experts in the BLM and other agencies. Analyses on mineral resources are also based on the expertise of BLM resource specialists at the WD. Effects are quantified, where possible. In absence of quantitative data, best professional judgment was used. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate.

General assumptions regarding all of the mining activities detailed below include the following:

- There would be no major regulatory changes in federal or state statutes, regulations, policy, or guidance that govern the exploration and development of minerals.
- Surface-disturbing and other disruptive activities at authorized mining and drilling locations could continue, resulting in wildlife disturbance, degradation of visual quality, recreation values, soil erosion, loss of livestock and wildlife forage, and loss of wildlife cover.

Leasable Minerals

An RFD scenario for oil and gas was developed in conformance with BLM Instruction Memorandum No. 2004-089 (see Appendix I). The RFD scenario was developed based on past exploration activities and reasonable estimates for future exploration and development given the following assumptions:

- The general geographic areas where oil and gas exploration is predicted to occur are within the Neogene Basin or Neogene Source Rock Play area;
- An estimated twelve wildcat wells (wells drilled in areas with no previous production) may be drilled in these Neogene Basins in the next 15 to 20 years. Many of the initial twelve wells would likely be located in the Buena Vista Valley and Kyle Springs areas;
- Construction of temporary road access and a drilling location for each wildcat well may disturb about 17 acres for the road and 4 acres for the well pad for each wildcat well, or a total of 250 acres for all the wildcat wells;
- Of these, an estimated 10 wells will be dry holes (no economically producible oil or gas is discovered). Dry holes will be plugged and abandoned, with surface reclamation occurring shortly afterward. Reclaimed acres (regraded and seeded) are assumed to be stabilized after two years. The maximum area disturbed at any one time would be approximately 42 acres;
- Two of the wells drilled are estimated to produce a discovery. Each of the discovery wells will probably prompt additional two step-out wells. These would be drilled near each proven well to establish the limits and continuity of the oil or gas reservoir and to assist with production. An estimated four step-out wells will be drilled, two for each discovery;
- Each step-out well will disturb up to four acres for the well pad and may disturb only seven acres for the access road by using the road constructed for the associated wildcat well. Total disturbance for the four step-out wells is 44 acres;

- One of the discoveries (including the two step-out wells) is estimated to have limited oil production and to occur on BLM-administered lands; and
- Geophysical exploration operations would comply with the terms and conditions for notice of intent to conduct geophysical exploration provided on BLM Form 3150-4a. Notices of intent submitted for the conduct of geophysical surveys would be evaluated on a case-by-case basis.

An RFD scenario for geothermal resources was developed in the Geothermal Resources Leasing Programmatic EA (BLM 2002a revised 2011-See Appendix I) in order to provide a reasonable estimate of anticipated exploration, development, and production activity that might be expected over the next 20 years of developing geothermal resources of the planning area. The RFD scenarios considered the location of KGRAs, historical leasing patterns and geologic models to identify favorable and prospective areas for developing geothermal energy within the planning area.

- Thirteen PVAs were identified that encompass approximately 1.9 million acres. These PVAs include the six KGRAs and areas with pending lease applications (typically in the vicinity of the KGRAs);
- Exploration drilling would occur on all geothermal leases over the next 20 years. During this period, up to about 50 parcels with 2 sites each would be drilled;
- Three temperature gradient or exploration flow test wells may be drilled on each lease, for a total of 100 exploration holes or six holes drilled per year;
- Each exploration drilling may disturb up to 2.8 acres/site. Each access road may disturb up to 3 acres. Exploration of each lease with three exploration wells may disturb up to 8.9 acres;
- Exploration drilling surface impacts would be transitory and are usually abandoned and reclaimed within two years. Assuming there would not be more than 12 drill pads disturbed at any one time, the total active disturbance would be nine acres;
- If successful, exploration programs lead to more detailed exploration drilling, and a few of which lead to the discovery of geothermal resources capable of developing up to five 45 megawatt geothermal power plants;
- A typical geothermal power plant was used as the benchmark to estimate the amount of disturbance that could be involved for the RFD scenario. These calculations are meant to be used as an indicator of the impacts involved, not as a cap or bound on the size of any geothermal power plant development. For assessment purposes, the assumption was that each power plant would disturb up to 217 acres, with the following characteristics:
 - Up to six production or injection wells (normally 4 production and 2 injection wells) could be drilled on each lease, with each well pad disturbing approximately 2.8 acres,
 - Thirty-eight acres of internal access roads would be created to service the wells,
 - Two pipelines disturbing approximately five acres each (15 acres total), and
 - A power plant would occupy approximately 10 acres, a disposal pond would disturb approximately five acres, and a 20-mile transmission line would disturb approximately 25 acres; and

- The total area of disturbance for five typical power plants would be 1,085 acres. Not all of the power plants would be constructed at the same time, and construction of each plant would likely be staged in five-megawatt increments. Therefore the degree of surface disturbance at any given time is less than 1,000 acres. In addition, mitigation and enhancement would have occurred in some portions of the lease before additional portions of the lease are developed.

Locatable Minerals

- Based on projections, permitting demands for both hard rock exploration and mining would likely increase over time. Exploration in large part would take place in areas near known mineral deposits and within historic districts; however, some exploration would also be conducted in other outlying areas.
- Currently there are ten large open pit gold and silver mines, and six other industrial mineral mines in operation in the planning area. Within the next 10 years, two to three currently active mines are expected to be closed and reclaimed. These mine closures would likely be offset with both new projects being developed and placed into production and the expansion of existing mines.
- There are no large-scale commercial placer operations operating in the planning area. “Nugget shooting”—searching for placer gold with hand-carried metal detectors—is a common activity in several areas. This activity and other small-scale placer mines typically operate under “casual use” criteria and use little other than hand tools and gold spirals or similar small-volume concentrating devices. Occasionally operators at this scale desire to use mechanized equipment to clear vegetation from small areas, and these are authorized by a notice under the provision for testing up to 1,000 tons of presumed ore. The planning area would likely anticipate 10 operations under this sort of notice during any given year. Moderate scale operations are authorized under a plan of operations and are permitted to use mechanized equipment for mining and processing in excess of 1,000 tons of ore. The planning area would anticipate one such proposal approximately every five years, or four such operations over the life of the plan.
- Gems and semiprecious stones mining in the planning area are small, usually operating under casual use criteria. Some moderate-sized operations rely on mechanized earthmoving to remove overburden, typically followed by hand picking the desired materials. These deposits will likely continue to be extended but will remain small, with labor-intensive mining methods.
- Low to moderate potential exists for production of most locatable industrial minerals, but the potential is good for production of carbonate (limestone and dolomite), diatomate, and gypsum where deposits are located near transportation corridors and are can be mined by inexpensive open-cut methods.
- Potential for copper production is also low, with the exception of moderate to good potential for further development of at least one massive sulfide copper deposit at the Big Mike Mine within the planning area.

- While there is small current production and little significant historic production of molybdenum in the planning area, the Ashdown Property was brought into production in 2007. Operations at this property may expand, based on ongoing exploration, and other molybdenum deposits also may be developed over the next 15 to 20 years.
- There is a moderate potential for the development of tungsten deposits due to recent significant price increases. Some of the larger, higher grade deposits in the planning area may be brought into production. Plans are in their early stages for reopening the moth-balled Springer Mine, which is on private land within the planning area.

Saleable Minerals

- The planning area has an active mineral materials sales and disposal program. The primary commodity sold to the public is sand and gravel, with a minor amount of decorative and building stone, clay, and decomposed granite. Substantial amounts of material are also provided free of charge to governments and nonprofit entities for public purposes, primarily road construction and maintenance. The mineral materials program administers 32 active sales contracts, 73 free-use permits, 33 established community pits, and 168 mineral site ROWs.
- Saleable mineral extraction and use will increase, along with mining activity, commercial development, recreation activities, and private property development. Saleable mineral sites with a priority for use will likely include sand, gravel, and rock quarries along state-, county-, and BLM-managed roads, especially along the Interstate 80 corridor.
- There is good potential for new and continued development of clay deposits in the planning area.
- There is moderate potential for development of building and ornamental stone deposits, including columnar basalt and flat slabby volcanic rock. Mines and quarries in the planning area include Trinity Range and Black Mountain in Churchill County.
- The demand for boulders for landscaping is likely to grow. Most of these operations are very small scale and remove a small number of boulders.
- There is low potential for development of pumice and cinder deposits.

Minerals—Leasable, Locatable, and Saleable: Effects from Air Quality Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from air quality management.

Effects under Alternative A

This alternative only addresses dust abatement and mitigation measures required for road maintenance associated with mining activities. Dust control for all mining activities is addressed in Alternatives B, C, and D. The road maintenance dust control measures would be continuous for the duration of mining. There would be minor increases to the cost of mining.

Effects under Alternative B

This alternative would require the air quality impacts from all BLM and BLM authorized activities to be minimized or reduced as determined on a case-by-case basis. Surface mining activities would require substantial efforts and costs to comply with these dust control requirements. The operational cost increases associated with dust control required for mineral exploration and development road building and maintenance would be manageable. The impacts of this alternative are equivalent under Alternatives C and D.

Effects under Alternative C

Alternative C would require the air quality impacts from all BLM and BLM authorized activities to be minimized or reduced as determined on a case-by-case basis. Surface mining activities would require substantial efforts and costs to comply with these dust control requirements. The operational cost increases associated with dust control required for mineral exploration and development road building and maintenance would be manageable. The impacts of the Alternative C air quality management actions are equivalent to those under Alternatives B and D. However, there would be less land available for mineral exploration under Alternative C, so the air quality management actions would be applied to fewer activities.

Effects under Alternative D

This alternative would require the air quality impacts from all BLM and BLM authorized activities to be minimized or reduced as determined on a case-by-case basis. Surface mining activities would require substantial efforts and costs to comply with these dust control requirements. The operational cost increases associated with dust control required for mineral exploration and development road building and maintenance would be manageable. The impacts of this alternative are equivalent under Alternatives B and C.

Minerals—Leasable, Locatable, and Saleable: Effects from Geology Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from geologic resource management.

Effects under Alternative A

The protection of unique geologic resources is not addressed in the current management plan. Avoidance of impacts on unique geologic resources and mitigation measures are addressed on a case by case basis. Since there is no overall plan for protection of these resources under this alternative, there is more land open for mining. This alternative has the fewest operational limits and costs associated with protecting unique geologic resources.

Effects under Alternative B

While areas with unique geologic resources would remain open for all methods of mineral disposal as in Alternative A, under this alternative the actions would be subject to the minimum mitigation measures sufficient to protect the values at risk, including through avoidance, reclamation, and other applicable use restrictions.

Areas with unique geologic resources include Lake Lahontan tufa mounds and shore features (e.g., gravel bars or shore terraces), Humboldt Range Natural Arch, Columnar Basalt near Lava Beds, McFarlan Hot Spring, and the 1915 earthquake fault trace.

The amount of land open for all methods of mineral disposal would be greater under this alternative than under Alternatives C and D. This alternative has more operational limits and higher costs associated with protecting unique geologic resources than Alternative A but fewer operational limits and costs than under Alternatives C and D.

Effects under Alternative C

Areas with unique geologic resources would be designated as exclusion zones for ROWs and other discretionary actions and the areas closed to saleable mineral disposal. The areas would not be available to leasable minerals exploration and development even with an NSO stipulation. Proposed nondiscretionary activities that may affect geologic features would be authorized with appropriate mitigation measures to protect the values at risk. The withdrawal of these areas from the General Mining Law would be pursued.

Areas with unique geologic resources include Lake Lahontan tufa mounds and shore features (e.g., gravel bars or shore terraces), Humboldt Range Natural Arch, Columnar Basalt near Lava Beds, McFarlan Hot Spring, the 1915 earthquake fault trace, Disaster Peak, Trego Mountain, and Pulpit Rock.

Alternative C would result in the least amount of area available for all methods of mineral disposal and the greatest protection of geologic resources.

Effects under Alternative D

Areas with unique geologic resource would be managed to protect these resources on a case-by-case basis using permit stipulations and mitigation measures such as avoidance to reduce impacts. There would be few impacts on mineral development.

Avoiding unique geologic resources may create the need to construct roads or facilities away from areas containing unique geologic resources and possibly increasing costs for mineral development. There may be additional reclamation costs to restore the settings around unique geologic resources to help restore pre-disturbance settings.

Minerals—Leasable, Locatable, and Saleable: Effects from Soil Resources Management

Effects Common to All Alternatives

Salvaging the best available material for growth medium would enhance reclamation success of disturbed areas.

Effects under Alternative A

Mine operators would be encouraged to minimize disturbance to biological soil crusts, to reduce soil erosion by using BMPs, and adopt erosion control techniques, such as seeding and placing straw bales or matting, on a case-by-case basis. The BLM would pursue land reclamation in disturbed areas

also on a case-by-case basis. These requirements would not reduce the amount of land available for mining activities but would increase operational limits and increase operational costs. This alternative is equivalent to Alternative B in that it would not restrict the amount of land open for mining activities. It is more restrictive than Alternative B in that some of the case-by-case mitigations and reclamations are slightly more protective of soils than under Alternative B.

Effects under Alternative B

Mine operators would be encouraged to minimize disturbance to biological soil crusts, reduce soil erosion by using BMPs and erosion control techniques, such as seeding and placing straw bales or matting. Multiple uses would be allowed with mitigations without seasonal closures. The BLM would pursue land reclamation in disturbed areas. Surface-disturbing activities would be required to salvage the best available material for use as growth medium for reclamation. This alternative is equivalent to Alternative A in not restricting the amount of land open for mining and requires fewer mitigations and reclamations than under Alternative A's often more stringent case-by-case basis. Alternative B includes fewer operational limits and costs to protect soils than Alternatives C and D.

Effects under Alternative C

Mine operators would be encouraged to maintain, protect, or reduce adverse impacts on soils and to eliminate or fully mitigate surface disturbances to biological soil crusts when soil surfaces are dry. Surface disturbances within high potential biological crust areas would be seasonally eliminated. The BLM would require reclamation of all surface-disturbing activities and would require salvage or import growth medium for reclamation.

Effects under Alternative D

Mine operators would be encouraged to maintain, protect, or reduce adverse impacts on soils. Surface disturbances within high potential biological crust areas would be seasonally restricted on a case-by-case basis. Where appropriate, the BLM would manage surface-disturbing activities to ensure reclamation. These activities would be required to salvage the best available material for use as growth medium for reclamation. This alternative is slightly less restrictive than Alternative C in the amount of land seasonally restricted from mining activities would be determined on a case-by-case basis. It is more protective of soils than Alternatives A and B with, greater operational limits and operational costs, and less protective than Alternative C.

Minerals—Leasable, Locatable, and Saleable: Effects from Water Resources Management

Effects Common to All Alternatives

Mineral activities could be limited under all alternatives to prevent degradation of water quality beyond established standards specified in the Nevada Water Pollution Control Regulations and the September 2004 memorandum of understanding between the BLM and the State of Nevada. These requirements could reduce the amount of land available for leasable and saleable mining activities and could increase operational limits and costs.

Effects under Alternative A

There would be no restrictions on the amount of land open to locatable mining activities or limits on mining operations based on water resource management objectives or actions under Alternative A beyond those discussed under Effects Common to All Alternatives above.

Effects under Alternative B

There would be no restrictions on the amount of land open to mining activities or limits on mining operations based on water resource management objectives or actions under Alternative B beyond those discussed under Effects Common to All Alternatives above.

Effects under Alternative C

In addition to impacts discussed under Effects Common to All Alternatives above, priority watershed areas would be considered open only to government entities for saleable minerals activities and would be closed to leasable minerals activities. While the rights to locatable minerals could be acquired, proposals for locatable mineral operations would include restrictions. The amount of land restricted from these mining activities would be greatest under Alternative C.

Effects under Alternative D

In addition to impacts discussed under Effects Common to All Alternatives above, priority watershed areas would be considered open only to government entities for saleable minerals activities and would be open but with NSO for leasable minerals activities. While the rights to locatable minerals could be acquired, locatable mineral operations would include restrictions for those that are incompatible with the priority use. The amount of land restricted from these mining activities would be less than under Alternative C.

Minerals—Leasable, Locatable, and Saleable: Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

There would be no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on forest/woodlands products management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Minerals—Leasable, Locatable, and Saleable: Effects from Vegetation—Invasive and Noxious Species Management

Effects Common to All Alternatives

There would be no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on weeds management objectives or actions. Under all alternatives, individuals or organizations involved in mineral activities would be responsible for controlling weeds imported or spread. With respect to effects on minerals resources, all of the alternatives are essentially equivalent. Weed control would enhance reclamation success.

Minerals—Leasable, Locatable, and Saleable: Effects from Chemical and Biological Control

Effects Common to All Alternatives

There would be no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on chemical and biological control objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Minerals—Leasable, Locatable, and Saleable: Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from vegetation-rangeland management.

Effects under Alternative A

There would be no restrictions on the amount of land open to mining or limits on mining, based on rangeland management objectives or actions under Alternative A.

Effects under Alternative B

There would be no restrictions on the amount of land open to mining or limits on mining, based on rangeland management objectives or actions under Alternative B. Reclamation requirements and costs would be greater under Alternative B than Alternative A. Under Alternative B, introduced grass communities would be reestablished in mining activity reclamation areas to allow for recovery.

Effects under Alternative C

There would be no restrictions on the amount of land open to mining or limits on mining, based on rangeland management objectives or actions under Alternative C. Reclamation requirements and costs would be slightly greater under Alternative C than Alternative B. Under Alternative C, native plant species and communities that are similar in structure and composition to the site potential would be established in areas of disturbance associated with mining activities.

Effects under Alternative D

There would be no restrictions on the amount of land open to mining or limits on mining, based on rangeland management objectives or actions under Alternative D. Reclamation requirements and costs would be the same as under Alternative C, where plant species and communities that are similar in structure and composition to the site potential would be established in areas of disturbance associated with mining activities.

Minerals—Leasable, Locatable, and Saleable: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

There would be no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on riparian and wetlands management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Minerals—Leasable, Locatable, and Saleable: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from fish and wildlife management.

Effects under Alternative A

Surveys for migratory birds in the project area would be required before any surface disturbance would be authorized. Mineral activities could be restricted or additional mitigations could be required. Areas where there are nests of migratory birds (including raptors) would continue to be open for acquiring rights to locatable minerals. However, inventories for nesting migratory birds (including raptors) done before the area is disturbed would be required for proposed surface disturbance activities during peak nesting period if active nests were present. Mitigations, including use restrictions and avoidance, would be employed. Seasonal restrictions on mining operations would increase costs. Alternative A is the least restrictive if the alternatives.

Effects under Alternative B

Surveys for migratory birds in the project area would be required before any surface disturbance would be authorized. Mineral activities could be restricted or additional mitigations could be required. Areas where migratory birds (including raptors) nest would continue to be open for acquiring rights to locatable minerals, but mitigations would be developed to protect migratory birds during the peak breeding season, including the avoidance of active nests. Seasonal restrictions on mining operations would increase costs.

Priority wildlife habitat areas would be managed as open with stipulations areas and may restrict other uses or apply mitigation measures that would impact the amount of land available for mining activities and increasing operational costs.

Alternative B is more restrictive on areas that are available for mineral development activities than Alternative A and less restrictive than Alternative C.

Effects under Alternative C

Surveys for migratory birds in the project area would be required before any surface disturbance would be authorized. Mineral activities could be restricted or additional mitigations could be required. Mechanical surface, vegetative, and human activities would be prohibited during the peak nesting period for migratory birds (including raptors), which is April 1 to July 15, in areas where these birds' nests are located.

Priority wildlife habitat areas would be managed as closed or as open with stipulations areas and may be restricted from other uses, or mitigation measures that would impact mineral development would be applied.

Alternative C is the most restrictive on areas that are available for mineral development activities.

Effects under Alternative D

Surveys for migratory birds in the project area would be required before any surface disturbance would be authorized. Mineral activities could be restricted or additional mitigations could be required. A predisturbance inventory for nesting migratory birds (including raptors) would be required when mechanical surface or vegetative disturbance activities are proposed during the peak nesting period, from March 1 to August 31 as determined by species. If nests with eggs or young are located, use restrictions or mitigation measures (e.g., avoidance) would be employed.

Priority wildlife habitat areas would be managed as closed or as open with stipulations areas and may restrict other uses or apply mitigation measures that would impact mining activities.

Alternative D is less restrictive on areas that are available for mineral development activities than Alternative C and more restrictive than Alternatives A and B.

Minerals—Leasable, Locatable, and Saleable: Effects from Special Status Species Management

Effects Common to All Alternatives

Under all alternatives, surveys for sensitive species in the project area would be required before any leasing or surface disturbance would be authorized. At the leasing stage, only literature or existing data search is required. Mineral activities could be restricted or additional mitigations could be required if it were determined that they affect federally listed species or habitat.

Concerning sage-grouse leks, the rights to locatable minerals could be acquired, but proposals for mineral operations would include the following restrictions (with some exceptions, modifications, and waivers authorized by the BLM):

- Protect sage grouse habitat by implementing use restrictions, stipulations, and mitigation measures incorporating protection of un-fragmented habitats, minimization of habitat loss, maintenance, and enhance or restore habitat conditions.
- On a case-by-case basis, apply no surface disturbance or no surface occupancy buffers when locating high profile structures (e.g., buildings, storage tanks, overhead power lines) near active sage-grouse leks.

Mining and exploration authorized by permits or contracts would be subject to required mitigation measures to include avoidance, no surface occupancy, buffer zones, seasonal restrictions, off site mitigation, use restrictions and rehabilitation to protect sensitive species habitat for Pygmy rabbit and bats. Other mining-related activities such as drilling or blasting would be discouraged within 200 yards of occupied bat habitats.

The restrictions would result in less land available for mining activities. The mitigations would result in greater operational costs.

Effects under Alternative A

In addition to the conditions discussed under Effects Common to All Alternatives above, areas within sage-grouse PMUs or near documented golden eagle, bald eagle, peregrine falcon, or prairie falcon nesting sites would continue to be open for acquiring rights to locatable minerals. However, these areas would have other seasonal restrictions, additional limitations, or stipulations applied to operations authorizations. The rights to locatable minerals could be acquired, but proposals for locatable mineral operations would include restrictions in those areas identified for exclusion of ROWs associated with special status species habitat.

Effects under Alternative B

In addition to the conditions discussed under Effects Common to All Alternatives above, areas within sage-grouse PMUs, or near documented golden eagle, bald eagle, peregrine falcon, or prairie falcon nesting sites, would continue to be open for acquiring rights to locatable minerals. However, these areas would have other seasonal restrictions, additional limitations or stipulations applied to operations authorizations. The rights to locatable minerals could be acquired, but proposals for locatable mineral operations and fluid mineral operations would include restrictions in those areas identified for exclusion of ROWs associated with special status species habitat. Saleable minerals operations in these areas would be allowed only for government entities for the maintenance of roads or other public facilities. Alternative B is more restrictive than Alternative A and would result in large amounts of saleable minerals resources being made available only to government entities. This would result in less availability of resources for other entities and possibly increased hauling and increased prices to consumers.

Effects under Alternative C

Special status species surveys are required for all alternatives for any surface-disturbing activities. In addition to this and other conditions discussed under Effects Common to All Alternatives above, Alternative C also requires specific surveys for pygmy rabbits within potential habitat and for any sensitive plant species that occurs within two miles of the project site.

Areas within 500 yards of documented golden eagle, bald eagle, peregrine falcon, or prairie falcon nesting sites would continue to be open for acquiring rights to locatable minerals. However, these areas would have other seasonal restrictions, additional limitations or stipulations applied to operations authorizations. ROWs associated with locatable mineral operations would include restrictions from those areas with identified special status species habitat.

While large-scale surface-disturbing discretionary mining would not be allowed within 200 yards of bat habitats under all of the alternatives, Alternative C extends this zone to within 500 yards. Other mining-related activities, such as drilling or blasting, would be discouraged within that zone. Where these mining-related activities cannot avoid bat habitat, mitigation would be required. In addition, no saleable mineral material disposal would be allowed in this zone. For leasing mineral activities, any

quarter-quarter-quarter section (10-acre parcel) within or intersected by the site or the 500-yard buffer line would be subject to NSO.

The rights to locatable minerals could be acquired, but proposals for locatable mineral operations or leasable minerals operations would include restrictions in those areas identified for avoidance or exclusion of ROWs associated with special status species and state rare and protected species habitat. Saleable minerals operations in these areas would be allowed only for government entities for maintaining roads or other public facilities.

Under Alternative B, less land is restricted to use of saleable minerals by government entities than under Alternative C. Otherwise, Alternative C would restrict the most land from being available for mineral activities and would include the most operational restrictions. These conditions would result in greater operational costs.

Effects under Alternative D

In addition to the conditions discussed under Effects Common to All Alternatives above, sensitive species surveys are required for all alternatives for any surface-disturbing activities. Alternative D also requires specific surveys for pygmy rabbits within potential habitat and for any sensitive plant species that occurs within two miles of the project site.

Leasable minerals operations would be restricted in those areas identified for avoidance or exclusion of ROWs associated with special status species habitat. Saleable minerals operations in these areas would be allowed only for government entities for maintaining roads or other public facilities.

Under Alternative B, less land is restricted to use of saleable minerals by government entities than under Alternative D. Otherwise, Alternative D would restrict the more land from mining activities than Alternatives A and B but less than Alternative C.

Minerals—Leasable, Locatable, and Saleable: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from WHB management.

Effects under Alternative A

Herd Management Areas (HMAs) would continue to be open for acquiring rights to locatable minerals but operations that could result in adverse impacts on the health and welfare of WHB may be permitted in HMAs subject to stipulated safeguards (SOPs) and mitigation measures (e.g., seasonal closures, signage, rerouting access). Alternative A is roughly equivalent to Alternatives B and D and less restrictive to mining activities than Alternative C.

Effects under Alternative B

HMAs would continue to be open for acquiring rights to locatable minerals. Saleable, leasable, and locatable minerals operations may be permitted in HMAs subject to stipulated safeguards (SOPs) and mitigation measures (e.g., seasonal closures, signage, rerouting access). Alternative B is

equivalent to Alternative D, roughly equivalent to Alternative A, and less restrictive to mining activities than Alternative C.

Effects under Alternative C

HMAAs would be closed to leasable minerals operations. The HMAAs would continue to be open for acquiring rights to locatable minerals. Saleable mineral operations by government entities for maintaining roads or other public facilities, and locatable mineral operations would be authorized if the free-roaming nature of WHB is maintained. Other saleable mining operations would not be allowed. Alternative C is the most restrictive alternative and would limit the amount of land open to minerals activities.

Effects under Alternative D

HMAAs would continue to be open for acquiring rights to locatable minerals. Saleable, leasable, and locatable minerals operations may be permitted in HMAAs subject to stipulated safeguards (SOPs) and mitigation measures (e.g., seasonal closures, signage, reroute access). Alternative D is equivalent to Alternative B, roughly equivalent to Alternative A, and less restrictive to mining activities than Alternative C.

Minerals—Leasable, Locatable, and Saleable: Effects from Wildland Fire Management

Effects Common to All Alternatives

There would be no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on wildland fire management objectives or actions. Implementing fuel treatments could protect mine infrastructure from wildfire. Protection of property is a suppression priority under the response to wildfires, based on social, legal, and ecological consequences of the fire. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Minerals—Leasable, Locatable, and Saleable: Effects from Cultural Resources Management

Effects Common to All Alternatives

Under all alternatives, in compliance with Section 106 of NHPA, surveys for cultural resources in the project area would be required before any surface disturbance would be authorized. Minerals activities could be restricted or additional mitigations required if it were determined that they affect cultural sites that are listed on the NRHP or that have been determined to be eligible for that listing.

The rights to locatable minerals could be acquired, but proposals for locatable mineral operations within a quarter mile of cultural sites that are listed on the NRHP or that have been determined to be eligible for listing may be restricted or have significant mitigation measures imposed.

Effects under Alternative A

Other than the conditions discussed under Effects Common to All Alternatives above, there would be no restrictions on the amount of land open to mining activities or limits on mining operations

based on cultural resources management objectives or actions under Alternative A. Alternative A is the least restrictive to mining activities.

Effects under Alternative B

In addition to the conditions discussed under Effects Common to All Alternatives above, the areas within a quarter mile of cultural sites that are listed on the NRHP or that have been determined to be eligible for that listing would be open to fluid and solid minerals leasing with NSO. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the site would be subject to NSO. Alternative B is more restrictive of mining activities than Alternative A and less than Alternatives C and D.

Effects under Alternative C

In addition to the conditions discussed under Effects Common to All Alternatives above, the areas within a quarter mile of cultural sites that are listed on the NRHP or that have been determined to be eligible for that listing would be closed to fluid and solid minerals leasing, saleable mineral operations. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the site would be closed. The impact of the Alternative C cultural resource management actions is equivalent in degree to that under Alternative D in limiting the amount of land available for mining activities. However, there would be less land available for mineral exploration under Alternative C, so the cultural resource management actions would apply to fewer activities.

Effects under Alternative D

In addition to the conditions discussed under Effects Common to All Alternatives above, areas within 1 mile of the CNHT would have no surface occupancy restrictions applicable to fluids and solid minerals. No new mineral material sales would be allowed for saleable minerals. These use restrictions would make fewer lands available for mineral exploration and development and would increase costs and effect feasibility saleable, fluid, and solid mineral projects.

Minerals—Leasable, Locatable, and Saleable: Effects from Tribal Consultation Management

Effects Common to All Alternatives

Mineral operations may be subject to required mitigation measures including avoidance to protect or reduce impacts on sacred sites, traditional religious practices, landforms, TCPs, and other areas of concern. These requirements may be modified based on Native American consultation and could involve larger or smaller areas based on the setting and use of areas.

Effects under Alternative A

In addition to the conditions discussed under Effects Common to All Alternatives above, the rights to locatable minerals could be acquired, but proposals for locatable mineral operations would be restricted or additional mitigation measures required in those areas identified for exclusion of ROWs associated with identified TCPs.

Effects under Alternative B

In addition to the conditions discussed under Effects Common to All Alternatives above, saleable minerals authorizations may be modified as to size or NSO stipulations, based on consultation with Native American tribes on the setting and use of any TCPs. Saleable minerals operations by government entities for the maintenance of roads or other public facilities would be allowed within a mile of an identified TCP known to be eligible or considered to be eligible for the NRHP.

Fluid and solid leasable minerals activities would be allowed within one mile of an identified TCP eligible for the NRHP subject to an NSO stipulation. To accomplish this, any quarter-quarter-section (10-acre parcel) within or intersected by the TCP or the one-mile buffer line would be subject to NSO.

The rights to locatable minerals could be acquired, but proposals for locatable mineral operations and fluid minerals operations would include restrictions or additional mitigation measures required in those areas identified for exclusion of ROWs associated with identified TCPs. Saleable minerals operations in these areas would only be allowed for government entities for the maintenance of roads or other public facilities.

Consultation with Native American tribes may produce recommendations for larger or smaller areas subject to NSO, based on the setting and use of any TCP.

Effects under Alternative C

In addition to the conditions discussed under Effects Common to All Alternatives above, Lovelock Cave, Dave Canyon, and areas within a mile of an identified TCP known to be eligible or considered to be eligible for the NRHP would be closed to saleable minerals and fluid and solid leasable minerals activities, including those of government entities.

Consultation with Native American tribes may produce recommendations for larger or smaller areas subject to closing based on the setting and use of any TCP.

The area of the Lovelock Cave mineral withdrawal would be enlarged to a total of 640 acres.

Effects under Alternative D

Impacts would be similar to Alternative A. Use restrictions and mitigation measures would be applied to mineral activities to protect traditional use areas and practices. Areas containing sacred sites would be avoided or mitigation measures would be developed to reduce adverse impacts through consultation with the tribes. Consultation with Native American tribes may produce recommendations for larger or smaller areas subject to use restrictions based on setting and use areas containing TCPs. Impacts associated with use restrictions and implementation of mitigation measures would increase costs to mineral activities and would affect the feasibility of projects.

Lovelock Cave and Dave Canyon would be closed to fluid and solid leasable minerals activities.

Consultation with Native American tribes may produce recommendations for larger or smaller areas subject to closure or NSO stipulations based on the setting and use of any TCP.

The area of the Lovelock Cave mineral withdrawal would be enlarged to a total of 640 acres.

Minerals—Leasable, Locatable, and Saleable: Effects from Paleontological Resources Management

Effects Common to All Alternatives

Under all alternatives, a review of existing data and an inventory of the presence and importance of fossiliferous deposits would be required before any surface-disturbing activity. The George Lund Petrified Forest mineral withdrawal would be maintained as closed to saleable and locatable minerals activities.

Effects under Alternative A

Other than to the conditions discussed under Effects Common to All Alternatives above, there would be no restrictions on the amount of land open to mining activities or limits on mining operations based on paleontological resources management objectives or actions under Alternative A.

Effects under Alternative B

Other than the conditions discussed under Effects Common to All Alternatives above, there would be no restrictions on the amount of land open to mining activities or limits on mining operations based on paleontological resources management objectives or actions under Alternative B.

Effects under Alternative C

In addition to the conditions discussed under Effects Common to All Alternatives above, the area of the George Lund Petrified Forest mineral withdrawal would be enlarged to a total of 141 acres.

Effects under Alternative D

In addition to the conditions discussed under Effects Common to All Alternatives above, saleable mineral activities and fluid and solid leasable minerals activities would be subject to conservation strategies and mitigation measures to maintain and protect paleontological resources. Impacts would include fewer lands available for mineral development and increased costs affecting the feasibility of mineral projects.

The area of the George Lund Petrified Forest mineral withdrawal would be enlarged to a total of 141 acres.

Minerals—Leasable, Locatable, and Saleable: Effects from Visual Resources Management

Effects Common to All Alternatives

All of the alternatives would require identification and management of areas according to their VRM values. Activities not meeting the VRM objectives may require mitigations, as determined on a case-by case basis. Surface use stipulations under some VRM classes could redesign, cancel, or mitigate

mineral activities. In addition, the alternatives require the protection of the visual integrity of the National Historic Trails and their viewsheds.

Other than the conditions discussed, there would be no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on visual resources management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Minerals—Leasable, Locatable, and Saleable: Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from cave and karst resource management.

Effects under Alternative A

There would be no restrictions on the amount of land open to mining activities or limits on mining operations based on caves and karst characteristics management objectives or actions under Alternative A. With respect to effects on minerals resources, Alternatives A, B, and D are essentially equivalent.

Effects under Alternative B

There would be no restrictions on the amount of land open to mining activities or limits on mining operations based on caves and karst characteristics management objectives or actions under Alternative B. With respect to effects on minerals resources, Alternatives A, B, and D are essentially equivalent.

Effects under Alternative C

The rights to locatable minerals could be acquired, but proposals for locatable minerals, saleable minerals, and fluid and solid leasable minerals operations would include restrictions within 500 feet of a cave or karst feature. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) intersected by the site or the 500-foot buffer line would be closed. Alternative C would be more restrictive for mining activities than would Alternatives A, B, and D.

Effects under Alternative D

There would be no restrictions on the amount of land open to mining activities or limits on mining operations based on caves and karst characteristics management objectives or actions under Alternative D. With respect to effects on minerals resources, Alternatives A, B, and D are essentially equivalent.

Minerals—Leasable, Locatable, and Saleable: Effects from Livestock Grazing Management

Effects Common to All Alternatives

There would be no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on livestock grazing management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Minerals—Leasable, Locatable, and Saleable: Effects from Minerals Management

Effects Common to All Alternatives

General

Impacts from mineral exploration are likely to include surface disturbances related to the construction of exploration drill roads and drilling pads. New and existing large-scale mines, mine expansions, and small-scale mining operations are likely to involve access road construction, increased traffic and surface disturbances associated with various mine facilities (for example: portals, pits, waste rock dumps, ore processing, tailing facilities, heap leach pads, administration and maintenance facilities; and stormwater runoff control ponds and diversions structures).

Impacts on mining include increased operational limits and costs associated with reclamation and interim reclamation. All alternatives include provisions for implementing concurrent reclamation at all mineral operations and interim reclamation for all facilities or features that would be unused for more than one year. These provisions will reduce the amount of land disturbed at any one time, as well as reducing erosion, loss of growth media, and siltation of nearby waterways. In addition, there would be no reduction of existing public access to public lands due to occupancy associated with minerals activities.

The Programmatic EIS for Geothermal Leasing in the western United States (BLM and Forest Service 2008), issued in December 2008, include provisions on lands open or closed to geothermal leasing and standardized stipulations, restrictions, and mitigations for geothermal exploration, development, and production. These conditions and restrictions will apply to the lands within the planning area except where this RMP EIS determines different or additional conditions or stipulations apply to specific locations.

The following restrictions would reduce the amount of land available for mining under all of the alternatives.

Saleable

Designated WSAs, the Pine Forest mineral withdrawal, and the George Lund Petrified Forest mineral withdrawal, would be maintained as closed to mineral material disposal (saleables) under all alternatives.

Leasable (Fluid and Solid)

All of the alternatives include requirements that neither fluid mineral or solid mineral leases would be allowed within a quarter mile of a WSA boundary. This would be accomplished by excluding from leasing any quarter-quarter section that was intersected by and including a portion of a WSA boundary.

Locatable

The existing withdrawals from locatable mineral development—Pine Forest, George Lund Petrified Forest, Lovelock Cave—would continue under all alternatives. The existing segregation at Water Canyon would also continue and mineral withdrawal would be pursued. Additional lands identified for mineral withdrawal under all alternatives is limited to Porter Springs (60 acres). The areas designated as closed to off-road vehicle use would continue to be open for acquiring rights to locatable minerals but would have additional limitations or stipulations applied to operations authorizations.

Effects under Alternative A***General***

Mining operations are required to implement reclamation of the mining operations including recontouring, stabilization, revegetation, or removal of facilities before closure. Mining operations would be required to implement existing guidance for revegetation resulting in self-sustaining vegetation communities.

Saleable

With the goal to provide mineral materials for local communities and county, state, and federal agencies while protecting natural resources, 6,786,059 acres would be open to mineral material disposal. Disposals would be made in accordance with demand within those areas. The authorized officer may exercise discretion and deny sales or permits at specific sites if environmental analysis shows impacts that cannot be mitigated. Otherwise, stipulations would be applied as necessary to reasonably protect other resources on a case-by-case basis. Approximately 418,938 acres would be closed to mineral material disposal.

The mineral material community pit sites within the WD planning decision area would continue to be evaluated and developed. The BLM would work with counties to provide free use permits for road development and maintenance.

Fluid

Leases would be offered on 6,745,878 acres of land open to fluid mineral leasing and development. Important resource values in otherwise open areas would be protected by applying stipulations determined to be necessary to reasonably protect other resources on a case-by-case basis, 6,716,296 acres would potentially be subject to seasonal or other restrictions. In addition, no land would be open with only standard lease terms and stipulations, and 29,582 acres would be open to leasing but subject to an NSO stipulation. Leasing would be closed on 446,887 acres.

Solid

The leasing of Winnemucca Lake, Carson Sink, San Emidio Desert, and Smoke Creek Desert for sodium and potassium would be allowed, as the demand arises.

Exploration permits and subsequent leases could be offered on 6,776,198 acres of land open to solid mineral leasing and development subject to standard terms and stipulations, as well as any stipulations that may be applied as mitigation. No acres would be open to solid mineral leasing and development with only standard lease terms and stipulations. Leasing would be closed on 416,652 acres.

Locatable

With the goal to have the planning area open to locatable mineral development, 7,198,294 acres would be open to locatable mineral development. The rights to locatable minerals could be acquired, but proposals for locatable mineral operations would typically require special handling or have additional limitations or stipulations applied to authorizations. Approved operations would be restricted to the extent required by existing law, regulation, or policy.

Effects under Alternative B

General

Reclamation of the mining operations, including recontouring, stabilization, revegetation, and removal of facilities before closure, would be required only if there is no reasonable prospect for continued economic use. Mining operations would be required to implement the existing guidance on reclamation financial guarantees. Revegetation would result in self-sustaining vegetation communities. Species included may be native or introduced, and their seed should be commonly available and ordinarily inexpensive.

Saleable

With the goal to maximize the development of mineral material resources and to support economic opportunities, 6,786,059 acres would be open to mineral material disposal. Disposals would be made in accordance with demand within those areas, except where they are incompatible with critical resource values. Stipulations would be applied as necessary to reasonably protect other resources on a case-by-case basis; 4,473,691 acres would be open with only standard authorization terms and stipulations, 1,445,244 acres would be open with additional seasonal or other restrictions, and 867,124 acres would be open only to permits to government entities for maintaining roads or other public facilities. Approximately 418,938 acres would be closed to mineral material disposal.

The availability of community pits and common use areas would be maximized, as well as the types of material and number of sites available from which to make sales. The availability of mineral materials to the public would be promoted. The BLM would work with municipalities and other eligible customers to maximize the number of free use permits and the associated production of mineral materials.

Fluid

Leases would be offered on 6,068,969 acres of land open to fluid mineral leasing and development, except where it would be incompatible with other critical resource values. Important resource values in otherwise open areas would be protected by applying stipulations necessary to reasonably protect other resources on a case-by-case basis; 4,472,814 acres would be open with only standard lease terms and stipulations, 1,374,731 acres would be open with additional seasonal or other restrictions, and 221,724 acres would be open to leasing but subject to an NSO stipulation. Leasing would be closed on 1,132,594 acres.

Solid

Leases would be offered on 6,068,498 acres of land open to solid mineral leasing and development, except where that would be incompatible with other critical resource values. Important resource values in otherwise open areas would be protected by applying stipulations necessary to reasonably protect other resources on a case-by-case basis; 4,472,950 acres would be open with only standard lease terms and stipulations, 1,373,904 acres would be open with additional seasonal or other restrictions, and 221,644 acres would be open to leasing but subject to an NSO stipulation. Leasing would be closed on 1,124,266 acres.

Locatable

With the goal to manage locatable mineral operations to maximize the resource development and support economic opportunities, 7,198,294 acres would be open to locatable mineral development. The rights to locatable minerals could be acquired, but proposals for locatable mineral operations would typically require special handling or would have additional limitations or stipulations applied to authorizations on 4,299,889 acres. Approved operations would be restricted to the minimum extent required by law or regulation. Off-site mitigation would be pursued only as required by law or regulation. Compliance inspections would be limited to the least number allowed by law, regulation, or policy and those that impose the least possible burden on the operator.

Effects under Alternative C

General

Mining operations are required to implement reclamation of the mining operations including recontouring, stabilizing, revegetating, or removing facilities before closure. The preoperational topography and a historically native vegetation community would be established to the maximum extent possible. Mining operations would be required to implement the existing guidance for revegetation using a variety of native seed mixtures appropriate to a local ecological setting that would result in self-sustaining vegetation communities.

Saleable

With the goal to manage mineral material resources to meet the needs of individuals, municipalities, and businesses, while ensuring compatibility with and protection of other resources and uses, 6,367,789 acres would be open to mineral material disposal. Disposals would be made in accordance with demand within those areas only where compatible with important resource values. Stipulations

would be applied as necessary to reasonably protect other resources; 2,746,668 acres would be open with only standard authorization terms and stipulations, no land would be open with additional seasonal or other restrictions, and 3,621,121 acres would be open only to permits to government entities for maintaining roads or other public facilities. Approximately 837,049 acres would be closed to mineral material disposal.

The minimum number of community pits and common use areas would be designated that would meet reasonably foreseeable demand for commodities. These designated areas would have few or mitigable impacts on cultural or biological impacts, would be in appropriate locations, and would have sufficient capacity to avoid a proliferation of sites for similar materials in a given area. Preference would be given to sales from community pits or common use areas.

The BLM would work with municipalities and other eligible customers to provide free use permits with adequate volumes of material to meet their needs. Preference would be given to permits in community pits or common use areas.

Fluid

Leases would be offered on 2,749,810 acres of land open to fluid mineral leasing and development only where compatible with other resources, where important resource values in otherwise open areas would be protected by applying stipulations determined to be necessary to reasonably protect other resources. These areas would be open with only standard lease terms and stipulations, no land would be open with additional seasonal or other restrictions, and no land would be open to leasing but would be subject to an NSO stipulation. Leasing would be closed on 4,455,028 acres.

Solid

Leases would be offered on 2,749,195 acres of land open to solid mineral leasing and development, only where it is compatible with other resources where important resource values in otherwise open areas would be protected by applying stipulations determined to be necessary to reasonably protect other resources. These areas would be open with only standard lease terms and stipulations, no land would be open with additional seasonal or other restrictions, and no land would be open to leasing but subject to an NSO stipulation. Leasing would be closed on 4,455,645 acres.

Locatable

With the goal to manage locatable mineral operations to meet the mineral needs of the nation, while ensuring maximum protection of resources, 6,922,945 acres would be open to locatable mineral development. The rights to locatable minerals could be acquired, but proposals for locatable mineral operations would typically require special handling or would have additional limitations or stipulations applied to authorizations on 3,507,622 acres. Approved operations would have stipulations developed during the course of the interdisciplinary review, emphasizing the maximum protection of other natural and cultural resources. Off-site mitigation would be pursued in accordance with applicable law, regulation, and policy at every opportunity available. Compliance inspections would meet policy and be of sufficient frequency and detail to ensure conformance with the notice of approved plan and maximize protection of other resource values.

Effects under Alternative D

General

Mining operations are required to implement reclamation of the mining operations, including recontouring, stabilizing, revegetating, or removing facilities before closure. Post-operational use and site reclamation configuration would be addressed in all relevant proposals for mineral operations and site development. Mining operations would be required to implement the existing guidance for revegetation using a variety of native and nonnative seed mixtures appropriate to the local ecological setting that will result in self-sustaining vegetation communities.

Saleable

With the goal to manage mineral material resources to meet the needs of individuals, municipalities, and businesses, while ensuring compatibility with and protection of other resources and uses, 6,539,184 acres would be open to mineral material disposal. Disposals would be made in accordance with demand in those areas. Stipulations would be applied as necessary to reasonably protect other resources; 2,871,026 acres would be open with only standard authorization terms and stipulations, 2,390,415 acres would be open with additional seasonal or other restrictions, and 1,277,700 acres are open only to permits to government entities for maintaining roads or other public facilities. Approximately 694,991 acres would be closed to mineral material disposal.

Community pits and common use areas would be designated in locations and sizes to meet the existing and reasonably foreseeable demand for the commodity or commodities available at each site, where compatible with resource values, while avoiding a proliferation of sites for similar materials in a given area. Most available mineral material sites would be designated as community pits or common use areas.

The BLM would work with municipalities and other eligible customers to provide free use permits with adequate volumes of material to meet their needs. Preference would be given to permits in community pits or common use areas.

Fluid

Leases would be offered on 5,429,707 acres of land open to fluid mineral leasing and development, except where that would be incompatible with important resource values. Important resource values in otherwise open areas would be protected by applying stipulations determined to be necessary to reasonably protect other resources; 2,851,895 acres would be open with only standard lease terms and stipulations, 2,435,327 acres would be open with additional seasonal or other restrictions, and 205,485 acres would be open to leasing but subject to an NSO stipulation. Leasing would be closed on 1,740,928 acres.

Solid

Leases would be offered on 5,492,706 acres of land open to solid mineral leasing and development, except where that would be incompatible with other important resource values. These values in otherwise open areas would be protected by applying stipulations necessary to reasonably protect other resources; 2,851,895 acres would be open with only standard lease terms and stipulations,

2,435,326 acres would be open with additional seasonal or other restrictions, and 205,485 acres would be open to leasing but subject to an NSO stipulation. Leasing would be closed on 1,740,930 acres.

Locatable

With the goal to manage locatable mineral operations to provide for the mineral needs of the nation, while ensuring compatibility with and protection of other resources and uses, 7,249,045 acres would be open to locatable mineral development. The rights to locatable minerals could be acquired, but proposals for locatable mineral operations would typically require special handling or would have additional limitations or stipulations applied to authorizations on 4,556,626 acres. Approved operations would have stipulations developed during the course of the interdisciplinary review. Off-site mitigation would be pursued in accordance with applicable law, regulation, and policy as a last resort, such as if on-site options were not available for the impacted resource or use. Compliance inspections would meet policy and be of sufficient frequency and detail to ensure conformance with the notice or approved plan.

Minerals—Leasable, Locatable, and Saleable: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

There are no use restrictions on the amount of land open to mining activities or limits on mining operations based on ERMA, SRMA, or RMZ management under any of the alternatives.

Effects under Alternative A

There would be no restrictions on the amount of land open to mineral material disposal, fluid mineral leasing or solid mineral leasing based on recreation, visitor outreach and services management objectives or actions under Alternative A. Areas closed to OHV use (17,698 acres) may require some stipulations and/or restrictions determined on a case-by-case basis through project specific NEPA analysis. Areas closed to OHV use would be open to acquiring rights for locatable minerals, but proposals for mineral operations in these areas would require special handling (submission of a plan of operation under present regulations) or have additional limitations or stipulations applied to authorizations.

Effects under Alternative B

Impacts would be the same as those described for Alternative A.

Effects under Alternative C

Impacts would be similar to those described for Alternative A except that the amount of area identified as closed for OHV use is 43,521 acres.

Effects under Alternative D

Under Alternative D, areas closed to OHV use (17,577 acres) would be closed to mineral material disposal and to fluid and solid mineral leasing. In these OHV closure areas, the rights to locatable

minerals could be acquired, but proposals for locatable mineral operations would require special handling (submission of a plan of operation under present regulations) or have additional limitations or stipulations applied to the authorizations.

Minerals—Leasable, Locatable, and Saleable: Effects from Renewable Energy Management

Effects Common to All Alternatives

There would be no management action restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on renewable energy management objectives or actions. However, project proponents can request segregation of the site from mineral entry for two years. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Minerals—Leasable, Locatable, and Saleable: Effects from Transportation and Access Management

Effects Common to All Alternatives

Avoiding duplication of roads and allowing continued public access on existing roads may result in greater levels of traffic on system roads. Under all alternatives, the primary users of system roads may be held responsible for funding or implementing road upkeep, especially where the mining-related traffic has higher level road design requirements than the BLM's.

Other than the conditions discussed above, there would be no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on transportation and access management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Minerals—Leasable, Locatable, and Saleable: Effects from Lands and Realty Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from lands and realty management.

Effects under Alternative A

There would be no restrictions on the amount of land open to mining activities or limits on mining operations based on lands and realty management objectives or actions under Alternative A.

Effects under Alternative B

Fluid minerals operations would be restricted from those areas identified for exclusion of ROWs and on lands acquired under the Southern Nevada Public Land Management Act. Saleable minerals operations in these areas would be allowed only for government entities for maintaining roads or other public facilities.

Lands acquired would be open to mineral material disposal in a manner consistent with the goals of the acquisition and considering the management applied to adjacent public lands. Alternative B is more restrictive of mining operations than are Alternatives A and D and is less restrictive than is Alternative C.

Effects under Alternative C

Lands acquired (by any process) would be closed to mineral material disposal and would be withdrawn from mineral entry. Alternative C is more restrictive than are Alternatives A, B, and D.

Effects under Alternative D

Lands acquired would be managed in a manner consistent with the goals of the acquisition and considering the management applied to adjacent public lands. Alternative D is more restrictive than Alternative A and less restrictive to mining activities than are Alternatives B and C.

Minerals—Leasable, Locatable, and Saleable: Effects from ACEC/RNA Management

Effects Common to All Alternatives

Under all alternatives, the BLM would continue to maintain the Osgood Mountains ACEC as closed to mineral disposal (saleables) for the protection of the Osgood Mountains milkvetch (*Astragalus yoder-williamsii*) plant species. The designated ACECs and the Osgood Mountains ACEC would continue to be open for acquiring rights to locatable minerals but would have additional limitations or stipulations applied to operations authorizations. The BLM would continue to pursue a mineral withdrawal for the Osgood Mountains ACEC.

The Pine Forest mineral withdrawal is, and would remain, closed to all mineral disposal. WSAs would be closed to saleable mineral and fluid and solid mineral leasing activities.

These restrictions would reduce the amount of land available for mining.

Effects under Alternative A

The areas would be available to fluid leasable minerals exploration and development with an NSO stipulation. The restrictions on mining under Alternatives A and B are equivalent and are less than those under Alternatives C and D.

Effects under Alternative B

The areas would be available to leasable minerals exploration and development with an NSO stipulation. The restrictions on mining activities under Alternatives A and B are equivalent, and less than, those under Alternatives C and D.

Effects under Alternative C

The areas would be closed to leasable minerals exploration and development activities. The BLM would seek to withdraw ACEC lands from locatable mineral development on a case-by-case basis

for the protection of important resource values. The restrictions on mining under Alternatives C and D are equivalent and are greater than those under Alternatives A and B.

Effects under Alternative D

The areas would be closed to leasable minerals exploration and development activities. The BLM would seek to withdraw ACEC lands from locatable mineral development on a case-by-case basis for the protection of important resource values. The restrictions on mining under Alternatives C and D are equivalent and are greater than those under Alternatives A and B.

Minerals—Leasable, Locatable, and Saleable: Effects from Backcountry Byways Management

Effects Common to All Alternatives

There would be no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on BCB management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Minerals—Leasable, Locatable, and Saleable: Effects from National Historic Trails Management

Effects Common to All Alternatives

The rights to locatable minerals could be acquired, but proposals for mineral operations may be restricted within a mile of the California National Historic Trail.

Effects under Alternative A

Other than the conditions discussed under Effects Common to All Alternatives above, there would be no restrictions on the amount of land open to mining activities or limits on mining operations based on national historic trails management objectives or actions under Alternative A. The restrictions on mining under Alternative A are less than those under Alternatives B, C, and D.

Effects under Alternative B

The areas within a mile of the California National Historic trail would be open to fluid and solid minerals leasing with NSO stipulations. Saleable minerals operations in these areas would be allowed only for government entities for maintaining roads or other public facilities. For leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the trail or the mile buffer line would be subject to NSO stipulations. The restrictions on mining under Alternative B are greater than those under Alternative A and are less than those under Alternatives C and D.

Effects under Alternative C

The areas within a mile of the California National Historic trail would be closed to fluid and solid minerals leasing, saleable mineral operations. For fluid and solid leasable minerals activities, any quarter-quarter-quarter section (10-acre parcel) within or intersected by the trail or the mile buffer

line would be closed. The restrictions on mining under Alternative C are greater than those under Alternatives A, B, and D.

Effects under Alternative D

The areas within a mile of the California National Historic trail would be closed to saleable mineral operations. The areas within a mile of the California National Historic trail would be open to fluid and solid minerals leasing with NSO stipulations. For leasable minerals activities, any quarter-quarter-section (10-acre parcel) within or intersected by the trail or the mile buffer line would be subject to NSO stipulations. The restrictions on mining under Alternative D are greater than those under Alternative A and B and are less than those under Alternative C.

Minerals—Leasable, Locatable, and Saleable: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from WSR management

Effects under Alternative A

Under Alternative A, eligible river corridors would be given protection through either continued interim protective management or the development of Comprehensive River management Plans. This would provide additional measures within the 13,583 acres of WSR corridors that would preserve the ORVs that led to eligibility. Subject to prior existing rights, this would include prohibition of new mining claims and mineral leases within the eligible corridors classified as wild.

Effects under Alternative B

There would be no impacts on leasable, locatable, or saleable minerals management from WSR management under Alternative B.

Effects under Alternative C

Under Alternative C, the effects on leasable, locatable, or saleable minerals management from WSR Rivers management would be the same as those described under Alternative A.

Effects under Alternative D

Under this alternative, there likely would be no impacts on leasable, locatable, or saleable minerals management from WSR management as long as WSA, priority habitat, and priority watershed management, as outlined in the remainder of the RMP, are implemented. In the case that these management actions are not implemented or are removed after implementation, interim protective management measures would be implemented within the 13,583 acres of eligible WSR corridors, which would have effects identical to those described under Alternatives A and C until a new determination of NWSRS suitability is made

Minerals—Leasable, Locatable, and Saleable: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

The existing designated WSAs, designated wilderness areas, and lands with wilderness characteristics would continue to be open for rights to locatable minerals but would have additional limitations or stipulations applied to operations authorizations, in accordance with BLM Manual #6330 Management of Wilderness Study Areas (BLM 2012e). The BLM would continue to manage 13 WSAs, totaling 508,186 acres, under the IMP until Congress either designates these areas or releases them for other purposes. Mineral development would generally not be allowed within these areas because the impacts would very likely violate the IMP. WSAs and designated wilderness areas are closed to fluid and solid minerals leasing and saleable minerals disposition.

Effects under Alternative A

Other than the conditions discussed under Effects Common to All Alternatives above, there would be no restrictions on the amount of land open to mining activities or limits on mining operations based on wilderness and wilderness study areas management objectives or actions under Alternative A. Under Alternative A, there would be no restrictions on the amount of land open to mining or limits on mining operations based on wilderness characteristics management objectives or actions. With respect to effects on minerals resources, Alternatives A and B are essentially equivalent.

Effects under Alternative B

Other than the conditions discussed under Effects Common to All Alternatives above, there would be no restrictions on the amount of land open to mining activities or limits on mining operations based on wilderness and wilderness study areas management objectives or actions under Alternative B. There would be no restrictions on the amount of land open to mining or limits on mining operations based on wilderness characteristics management objectives or actions under Alternative B. With respect to effects on minerals resources, Alternatives A and B are essentially equivalent.

Effects under Alternative C

The rights to locatable minerals could be acquired, but proposals for locatable mineral operations or leasable minerals operations would include restrictions in those areas identified for avoidance or exclusion of ROWs associated with the Pine Forest Range not included in the WSA or the Montana Mountains. Saleable minerals operations in the Pine Forest Range would only be allowed for government entities for the maintenance of roads or other public facilities. Lands with wilderness characteristics would be closed to fluid and solid minerals leasing and saleable minerals disposition. Alternative C is the most restrictive with respect to effects on minerals resources.

Effects under Alternative D

Leasable minerals operations would be restricted from those areas identified for avoidance or exclusion of ROWs associated with the Pine Forest Range not included in the WSA or the Montana Mountains. Saleable minerals operations in the Pine Forest Range would be allowed only for government entities for maintaining roads or other public facilities. Under Alternative D, there

would be no restrictions on the amount of land open to mining or limits on mining operations based on wilderness characteristics management objectives or actions, although some wilderness characteristics would be afforded protection through restrictions from other resources management actions. With respect to effects on minerals resources, Alternative D is less restrictive than Alternative C and more restrictive than Alternatives A and B.

Minerals—Leasable, Locatable, and Saleable: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There would be no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on watchable wildlife viewing sites management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Minerals—Leasable, Locatable, and Saleable: Effects from Public Health and Safety Management

Effects Common to All Alternatives

The BLM would benefit public safety by constraining or restricting the activities of the public on public land where there is a proven need to ensure safety or protect resources. These constraints could include fencing or otherwise closing dangerous, accessible mine shafts and adits and posting gravel pits and other potential dumping sites against illegal dumping.

Other than the conditions discussed above, there would be no restrictions under any of the alternatives to the amount of land open to mining or limits on mining, based on public health and safety management objectives or actions. With respect to effects on minerals resources, all of the alternatives are essentially equivalent.

Minerals—Leasable, Locatable, and Saleable: Effects from Sustainable Development Management

Effects under Alternative A

Under Alternative A, there would be no restrictions on the amount of land open to mining or limits on mining operations based on sustainable development management objectives or actions. Potential benefits to mineral resource operations include improved capability or flexibility in acquiring public lands and less costly reclamation. With respect to effects on minerals resources, Alternatives A, C, and D are essentially equivalent.

Effects under Alternative B

Under Alternative B, there would be no restrictions on the amount of land open to mining activities or limits on mining operations based on sustainable development management objectives or actions. Under Alternative B, existing guidance and standards for reclamation and closure would be deferred or delayed for up to five years from the end of active mining of sites that have a reasonable prospect for economic use. Alternative B is potentially more beneficial to mineral resource operations than

Alternatives A, C, and D, due to improved capability or flexibility in acquiring public lands and less costly reclamation.

Effects under Alternative C

Under Alternative C, there would be no restrictions on the amount of land open to mining activities or limits on mining operations based on sustainable development management objectives or actions. Potential benefits to mineral resource operations include improved capability or flexibility in acquiring public lands and less costly reclamation. With respect to effects on minerals resources, Alternatives A, C, and D are essentially equivalent.

Effects under Alternative D

There would be no restrictions on the amount of land open to mining activities or limits on mining operations based on sustainable development management objectives or actions under Alternative D. Potential benefits to mineral resource operations include improved capability or flexibility in acquiring public lands and less costly reclamation. With respect to effects on minerals resources, Alternatives A, C, and D are essentially equivalent.

Minerals: Cumulative Effects

Past and Present Actions

Past and present impacts resulting from livestock grazing has posed few impacts on mineral actions. Impacts have included additional costs to fence infrastructure to prevent damage from livestock or injury to livestock, secure areas to provide public safety, and to restrict wildlife and WHB. Permit stipulations and implantation of mitigation measures have affected the design and reclamation of facilities increasing costs. Special status species management has generated additional costs to in order to comply with mitigation measures designed to protect sensitive species. Wildfire impacts have included burned infrastructures and affected operations. Potential impacts have been addressed through construction of strategically placed fuelbreaks and suppression priorities.

Reasonably Foreseeable Actions

Impacts would be similar to the past and present actions for livestock grazing. Renewable energy projects would have few known impacts on mining. Land tenure adjustments may improve long-term mining in areas through mining company acquisition of public lands around mine sites. Designation of priority wildlife habitat and watersheds, sensitive species management and ACECs would restrict certain uses needed to support mining operations affecting the costs and feasibility of projects.

These impacts would be limited based on location, habitat conditions, and management discretion in those areas. Large landscape scale fuelbreaks may afford additional protection to mining facilities from wildfire.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Management strategies and permit requirements, including implementation of mitigation measures and permit stipulations applicable to mining development to protect or reduce impacts on sensitive resources would increase costs. Use restrictions in designated priority wildlife habitat and priority watershed areas would protect areas by limiting uses. The impacts on mineral development would vary based on the number of acres designated with use restrictions. Mining would experience increased costs and feasibility of operations proposed in those areas would be affected as saleable, fluids, and solid leasable minerals may not be permitted or restricted. Overall the incremental impacts on minerals would be moderate with lower impacts on locatable minerals and moderate impacts applicable to saleable, moderate applicable to oil and gas and moderate to high for geothermal minerals and solid minerals leasing as fewer public lands would be available for use.

4.3.3 Recreation and Facilities

Summary

Effects on recreation management from the proposed alternatives would result in a range of possible outcomes. Surface-disturbing activities, such as wildland fire management and mineral development, would have short-term and long-term effects on recreation users. This would be the case if areas and activities were restricted or excluded until surface-disturbing activities had concluded, or if such activities were to change the landscape character or the available recreation opportunities.

Special designations, including Wilderness Areas, WSAs, and ACECs recommended as suitable for designation, affect recreation management. Typically, these designations protect important historical, cultural, and scenic values, which encourage nonmotorized and more primitive backcountry experiences. Opportunities for this type of recreation user would increase as the percentage of the designated acreage increases. Recreation users who prefer motorized travel as an activity or who require motorized travel to access an area could be affected if previously accessible areas were to become inaccessible to motorized travel.

Maintaining and possibly increasing SRMA designations would protect recreation resources and would encourage appropriate recreation in these areas. The focus in these designations would include the most popular activities within the WD, such as camping, OHV use, pleasure driving, photography, and picnicking.

Recreation indicators were identified to assess environmental effects. Table 4-47 identifies the indicators that were used to analyze effects on recreation management under each alternative.

Alternatives B and D would designate the greatest number of SRMAs and the largest amount of acreage with SRMA designations. Those two alternatives also would designate the greatest number of RMZs. Alternative A designates no additional SRMAs but maintains the current Pine Forest SRMA designation, while Alternative D adds three new designations. Alternative A would have the fewest number of acres designated in SRMAs, and Alternative C would have the second fewest acres.

Table 4-47
Summary of Effects on Recreation—Alternatives A, B, C, and D

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Number of SRMAs	2	4	2	4
Acres of SRMAs	37,272	1,221,247	189,251	1,221,247
Number of RMZs	0	13	5	13
Acres open to OHV use	6,789,612	1,460,200	0	288,105
Acres with limited OHV use	423,786	5,743,198	7,187,575	6,925,414
Acres closed to OHV use	17,698	17,698	43,521	17,577

OHV use, which is a very popular activity within the WD, would be open on the greatest number of acres under Alternative A, followed by Alternative B. Alternative D would severely restricts open OHV use, and Alternative C would completely preclude it. Limited OHV use would occur on similar acreage under all the alternatives except Alternative A, which would have the fewest acres with limited OHV use. Alternative C would close OHV use on the most acres, followed by Alternative D. A similar number of acres would be closed to OHV use under Alternatives A and B.

Methods of Analysis

Methods and Assumptions

This section presents potential impacts of the alternatives on outdoor recreation and visitor services, as determined through potential changes to visitor and community resident preferences (activities, experiences, benefits), recreation setting conditions (physical, social, administrative), recreation management (resources, signing, facilities), recreation marketing (visitor services, information, interpretation, and environmental education), recreation monitoring (inventory, monitoring), and recreation administration (permits and fees and visitor limits and regulations), as they are described in Chapter 3. These recreation features are interrelated and connected to access. For example, changes in recreation settings would result in corresponding changes in opportunities to achieve desired recreation experiences and associated benefits, influenced by access.

Recreation experiences and the potential attainment of a variety of beneficial outcomes are vulnerable to any management action that would alter the settings and opportunities in a particular area. Recreation settings are based on a variety of attributes, such as remoteness, the amount of human modification in the natural environment, evidence of other users, restrictions and controls, and the level of motorized vehicle use. Management actions that greatly alter such features within a particular portion of the planning area could affect the capacity of that landscape to produce appropriate recreation opportunities and beneficial outcomes.

The analysis of potential impacts on recreation is based on IDT knowledge of the planning area and visitor use reporting statistics from the WD and the Recreation Management Information System, which provide information on the amount and types of recreation. Spatial GIS information was also used in this analysis and includes wildlife habitat boundaries, wilderness characteristic boundaries, transportation inventory and designations, ecological zones and vegetation types, recreation sites, historical and recreational trails, known historical and cultural sites, visual resource management classifications, and grazing allotments. Effects are quantified where possible. In the absence of

quantitative data, best professional judgment was used, and impacts are expressed in qualitative terms.

The analysis was based on the following assumptions:

- The demand for recreation use would continue to increase;
- Recreation visits would continue to increase;
- The incidence of resource damage and conflicts among recreationists involved in mechanized, motorized, and nonmotorized activities would increase as use of public lands increases;
- Anticipated increases would include OHV use; and
- Users would continue to develop trails.

Recreation and Facilities: Effects from Air Quality Management

Effects Common to All Alternatives

Improved air quality, including dust control, would improve the quality of recreation within the WD, particularly appreciation of scenic vistas and driving for pleasure. However, implementing dust control measures could increase the costs of construction of new facilities and access roads, thereby potentially limiting those types of improvements for recreationists.

Recreation and Facilities: Effects from Geology Management

Effects Common to All Alternatives

Under all alternatives, management actions that establish additional protection for geological features would increase recreation opportunities for viewing, hiking, and photography associated with these features.

Effects under Alternative A

Alternative A would have the fewest impacts on OHV use of all of the alternatives. Maintaining open OHV travel use within geologic resource zones under Alternative A would allow the greatest opportunities for motorized recreation of all of the alternatives.

Effects under Alternative B

OHV travel use would change from the current designation of open under Alternative A to a designation of limited for existing roads and trails within geologic resource zones under Alternative B. This management action would restrict OHV users, thereby reducing OHV opportunities.

Effects under Alternative C

Under Alternative C, geologic resource zones would be closed to OHV travel use. Therefore, Alternative C has the greatest impacts on OHV use from geology management since OHV use remains open in geologic exclusion zones under Alternative A and is limited to existing roads and

trails under Alternative B. Alternative C restricts OHV users and reduces OHV opportunities more than any of the alternatives.

Effects under Alternative D

There would be no impacts on recreation from management of geologic resources.

Recreation and Facilities: Effects from Soil Resources Management

Effects Common to All Alternatives

All four alternatives minimize breaking up or shearing biological crusts. Achieving this management objective could limit or eliminate OHV travel use and other recreation, either seasonally or year-round.

Effects under Alternative A

Alternative A would have the potential to restrict recreation because it seeks to minimize breaking up or excessive shearing to biological soil crusts, particularly when soil surfaces are dry. However, unless limitations or closures were imposed, effects on recreation are unlikely.

Effects under Alternative B

Alternative B would likely affect recreation, including OHV use, at about the same level as Alternative A and less than Alternative C. A variety of methods could be used to maintain and improve various soil surface components, thereby reducing the likelihood that those objectives would be achieved through area or seasonal closures or limitations on OHV use and other recreation.

Effects under Alternative C

Alternative C has the greatest likelihood of restricting recreation. This alternative would seasonally eliminate surface disturbances in areas with high potential for biological crusts, thus seasonally restricting OHV use and other recreation in those areas. Consequently, these options have the greatest potential for impacts on OHV use and other recreation, including commercial activities and competitive events, of any of the alternatives.

Effects under Alternative D

Of the four alternatives, Alternative D has the least potential for impacts on OHV use and other types of recreation in some areas. OHV and other restrictions would be limited to areas with minimal vegetative cover, including naturally erosive areas, such as washes, playas, and barren dunes. Additionally, methods other than reduction or elimination of OHV travel use and other recreation could be used to improve soil components. Therefore, the likelihood of impacts on recreation, including OHV use, under this alternative is less than under the other three alternatives.

Recreation and Facilities: Effects from Water Resources Management***Effects Common to All Alternatives***

There would be no effects common to all alternatives from water resource management.

Effects under Alternative A

Water resources management under Alternative A would be the least likely to affect recreation settings or opportunities within the WD because it does not restrict public use of priority watersheds.

Effects under Alternative B

Although all three action alternatives would designate 190,210 acres of priority watersheds, Alternative B would have the least effect on recreation since the watersheds would be managed for multiple uses. It is possible that no effect on recreation would occur.

Effects under Alternative C

Alternative C would potentially have the greatest effect on recreation of the four action alternatives. This is because priority watersheds would be exclusion areas for discretionary actions that are considered incompatible with the resource for which the priority was created. OHV travel use, commercial activities, and competitive events would all likely be excluded from priority watersheds due to their impacts on vegetative cover, soil compaction, erosion, and human waste. Camping and other recreation could also be excluded due to their potential effects on watersheds.

Effects under Alternative D

There would be few, if any, impacts on recreation based on priority watershed management under Alternative D. Recreational activity restrictions (OHV use) within priority watersheds would be incidental, based on other resource protection actions.

Recreation and Facilities: Effects from Vegetation—Forest and Woodland Products Management***Effects Common to All Alternatives***

The use of mechanical or biological treatments to achieve stand health, structure, and species composition objectives would affect the recreation setting and opportunities in treated areas. Effects on recreation would occur whether the fire is prescribed or if a natural fire regime is allowed. The designation, or lack thereof, of acres of old growth forest also affects the availability of a primeval and unique type of recreation setting.

Effects under Alternative A

Alternative A prescribes fire to enhance deteriorated aspen and cottonwood stands. Since the use is limited to these forest types only, the effects on recreation under this alternative would be minimal. Recreationists who find recently burned areas objectionable and choose to avoid those areas would

have many other areas available to recreate. Management closures until revegetation occurred would also redirect recreation to other areas.

The use of fencing, clear cutting, or herbicides to enhance aspen and cottonwood stands would create visual and barrier effects that would change recreation settings and opportunities. In particular, OHV use would be restricted by fencing. However, since such treatments would be limited to aspen and cottonwood, effects would likely not be widespread.

Alternative A does not designate any acres of old growth forest, which precludes the availability of the recreational setting and the opportunities afforded by this type of ecosystem.

Effects under Alternative B

The effects on recreation from Alternative B would be similar to those described under Alternative D and are greater than those under the other alternatives. Alternative B uses wildland fire in addition to prescribed fire as a management tool to enhance aspen and other stands. Consequently, both the types of stands and the extent of the area affected could be large. The recreational setting would be changed in recently burned areas, and some recreationists would avoid such areas, thereby potentially decreasing the spectrum of recreation opportunities and increasing recreational use in other areas. Management closures put in place until revegetation occurred would also direct recreation to other areas.

Alternative B uses fencing, mechanical, biological, or chemical treatments, and planting and seeding to achieve stand objectives. Such treatments would create visual and barrier effects that would change recreational settings and opportunities. In particular, OHV use would be restricted by fencing. Treatments could be widespread, thereby increasing the effects on recreation. Alternative B also includes firewood harvesting areas, which would increase human presence and noise in those areas and would change the visual appearance of the stand. All of those effects would change the recreational setting and opportunities in firewood harvest areas. Alternatives B and D are similar, would have similar effects on recreation, and represent the potentially greatest effects on recreation of the four alternatives.

Like Alternative A, this alternative does not designate any acres of old growth forest. Effects on recreation would be similar to those under Alternative A.

Effects under Alternative C

The effects on recreation from Alternative C would be the least of any of the alternatives since natural fire regimes would be allowed, but fire would not be prescribed as a management tool; however, effects could be widespread in the event of a large wildfire. In that case, effects on recreation would likely exceed those under Alternative A, which uses prescribed fire only in deteriorated stands of cottonwood and aspen. Recreational effects would be the same as those described under Alternatives B and D.

The effects on recreation under Alternative C from the use of stand management methods would be similar to but less widespread than those under Alternatives B and D. Alternative C does not include firewood harvest areas.

Alternative C designates 27,605 acres of old growth forest, as does Alternative D. These alternatives would offer an opportunity to recreate in an old growth forest setting.

Effects under Alternative D

The effects on recreation from Alternative D would be the greatest of any of the alternatives. The effects would be similar to those under Alternative D, but the use of fire as a management tool would potentially be more widespread. Wildland fire also would be used as a tool. Consequently, both the types of stands and the extent of the area affected could be large. Effects on recreation would be the same as those described under Alternatives B and C.

The effects on recreation under Alternative D from the use of stand management methods would be similar to those under Alternative B.

Alternative D designates 27,605 acres of old growth forest, as does Alternative C. The effects on recreation would be similar to those described under Alternative C.

Recreation and Facilities: Effects from Vegetation—Invasive and Noxious Species Management

Effects Common to All Alternatives

Under all alternatives, weed management would have only a small effect, if any, on recreation. However, over time, effective weed management would improve the quality of the recreation settings by improving the health of ecosystems, thereby increasing recreational opportunities, such as photography, wildlife viewing, and scenic appreciation. No discernible difference in effects on recreation would occur from the individual alternatives.

Recreation and Facilities: Effects from Chemical and Biological Control

Effects Common to All Alternatives

Chemical and biological control would have a small effect, if any, on recreation. However, effective pest management would improve the quality of recreation settings and experiences over the long term as ecosystem health improved. No discernible difference in effects on recreation would occur from the individual alternatives.

Recreation and Facilities: Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

All four of the alternatives would affect recreation and OHV use patterns through land treatments to improve degraded rangelands.

Effects under Alternative A

Alternative A would have a short-term effect on recreation and OHV use through land treatments to improve degraded rangelands. Prescribed fire and ES&R treatments would likely result in short-term closures of areas for recreation and OHV use, both during treatment and possibly afterwards to protect exposed soil surfaces from erosive and to allow vegetation to become established.

Recreation in these areas would be temporarily displaced, and recreational use patterns would be temporarily altered.

Effects under Alternative B

The effects on recreation and OHV use from Alternative B are greater than those from Alternative A and would be similar to the effects under Alternatives C and D. Land treatments, including fire, would be used under this alternative, but Alternative B would also employ fencing and use restrictions that would likely displace some recreational activities and would change some recreational use patterns on a long-term basis.

Effects under Alternative C

The effects on recreation and OHV use under Alternative C from land treatment methods to improve degraded rangelands would be similar to those described under Alternatives B and D.

Effects under Alternative D

The effects on recreation and OHV use under Alternative D from land treatment methods to improve degraded rangelands would be similar to those described under Alternatives B and C.

Recreation and Facilities: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Placement of structures or fencing would affect recreational use patterns under all the alternatives.

Effects under Alternative A

Restoration of degraded riparian areas could inhibit recreational access and use patterns in the affected areas by fencing and the construction of structures. Effects on recreation would be similar to but not as large or widespread as under Alternative B since fewer management actions are proposed under this alternative.

Effects under Alternative B

Implementing BMPs to address nongrazing impacts on riparian areas would affect recreation use patterns, settings, and experiences. In particular, closure or relocation of routes and elimination or hardening of stream crossings would affect recreationists, particularly those using OHVs. Access to some areas could become more difficult if routes were closed or changed. Eliminating stream crossings could also affect access to some areas. However, route changes and hardening of stream crossings could allow access to areas that were previously inaccessible. All of these management actions would affect recreation use patterns. Over the long term, the recreational setting and experiences in currently degraded riparian areas would change as the condition of the ecosystem changes. The activities most likely to be affected are OHV use, fishing, wildlife viewing, hiking, and camping. The effects on recreation under Alternatives B, C, and D would be similar.

Effects under Alternative C

Effects on recreation would be similar to those described under Alternative B.

Effects under Alternative D

Effects on recreation would be similar to those described under Alternative B.

Recreation and Facilities: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from fish and wildlife management.

Effects under Alternative A

No priority wildlife habitat areas would be designated under Alternative A, so no effects on recreation would occur.

Effects under Alternative B

There could be effects on recreation if restrictions were imposed through the application of mitigation measures for priority habitats.

Effects under Alternative C

The potential effects on recreation would be the same as those described under Alternative B.

Effects under Alternative D

The potential effects on recreation would be the same as those described under Alternative B.

Recreation and Facilities: Effects from Special Status Species Management

Effects Common to All Alternatives

Management actions in all of the alternatives to protect sensitive plant species and their habitats would affect recreation by limiting surface-disturbing activities, which would likely restrict special events and OHV use. Recreation would also be affected by actions to protect bat habitat, including restrictions on human access to occupied adits and caves, which would limit spelunking. Effects on recreation use patterns could occur from use restrictions to protect documented northern goshawk nest areas and sites.

Effects under Alternative A

Alternative A would impose seasonal and use restrictions to protect the habitat of sensitive plant species. These restrictions would affect recreation opportunities seasonally and intermittently, which would result in temporary alterations in recreation use patterns. Restrictions could include prohibitions on OHV use, commercial activities, and special events, and possibly on other recreation activities, such as horseback riding, mountain biking, hiking, or camping. Restrictions, and the resulting effects on recreation, would be temporary, intermittent, and limited in scope.

Management actions to protect bat habitat would affect recreation. Large-scale, surface-disturbing discretionary actions such as special events, would be prohibited within 200 yards of habitat. Human access to occupied adits and caves would be restricted by bat gates, which would limit opportunities

for spelunking and would redirect opportunities to those caves not inhabited by bats. Both actions would alter recreation use patterns.

Effects on recreation use patterns could also occur from use restrictions to protect documented northern goshawk nest areas and sites.

Effects under Alternative B

The effects on recreation from management actions to protect sensitive plant species and their habitat would be similar to those under the other alternatives.

Management actions to protect bat habitat would affect recreation less under Alternative B than under Alternatives A, C, and D, all of which have similar effects. Large-scale, surface-disturbing discretionary actions, such as special events, would be allowed under this alternative, subject to mitigation. However, like the other alternatives, human access to adits and caves would be restricted, thereby limiting spelunking. Effects on recreational use patterns from protection of northern goshawk nest areas and sites would be the same under all alternatives.

Effects under Alternative C

Effects on recreation from management actions to protect sensitive plant species would be similar to those described under the other alternatives.

Under Alternative C, use restrictions prohibiting surface disturbance near leks or within PMUs would prohibit permitted commercial recreational uses such as motorcycle races. Surface disturbance within two miles of sage-grouse leks would be prohibited. Human activity would be avoided during evenings and nights between March 1 and May 20 within a quarter mile of occupied leks. Some alteration of recreational use patterns would likely result, and overall effects on recreation would be greater than under Alternative D.

Effects on recreation from management actions to protect bat habitat would be similar to those described under Alternatives A and D.

Effects on recreational use patterns from protection of northern goshawk nest areas and sites would be the same under all alternatives.

Effects under Alternative D

Effects on recreation from management actions to protect sensitive plant species would be similar to Alternatives A and C.

Effects on recreation from management actions to protect bat habitat would be similar to those described under Alternatives A and C.

Effects on recreational use patterns from protection of northern goshawk nest areas and sites would be the same under all alternatives.

Recreation and Facilities: Effects from Wild Horse and Burro Management***Effects Common to All Alternatives***

Restrictions on commercial activities and competitive events would be imposed in HMAs under all of the alternatives to protect the health and welfare of WHB.

Effects under Alternative A

Under Alternative A, commercial activities and competitive events would be allowed in HMAs, but safeguards and mitigation measures would be imposed to protect the health and welfare of WHB. These protective measures could include seasonal closures and rerouting of courses, thereby changing recreation patterns.

Effects under Alternative B

The management measures and potential effects on recreation under Alternative B would be similar to those under Alternatives A and D.

Effects under Alternative C

Alternative C disallows commercial activities and competitive events that would negatively affect the health and welfare of WHB unless those effects would be minimal. Therefore, Alternative C has the greatest potential to affect recreation of any of the other alternatives.

Effects under Alternative D

The management measures and potential effects on recreation under Alternative D would be similar to those described under Alternatives A and B.

Recreation and Facilities: Effects from Wildland Fire Management***Effects Common to All Alternatives***

All alternatives would suppress wildland fires that meet specific criteria, which would minimize fire-related interference with recreational activities and experiences. Fuel breaks would protect SRMAs and infrastructure. Recreation areas with infrastructure would become priority suppression areas under a response to wildfires, based on social, legal, and ecological consequences of the fire, in order to protect property. Unsuppressed wildland fires would likely result in temporary closures until revegetation occurred, thereby changing recreational use patterns and reducing recreational opportunities in some areas. No discernible difference in effects on recreation would occur for the individual alternatives.

Recreation and Facilities: Effects from Cultural Resources Management***Effects Common to All Alternatives***

Implementing site-specific measures for cultural resources, including protecting scenic viewsheds and historic trails, would protect these resources of interest to the recreating public. However, these measures could restrict the development of recreational facilities and related opportunities.

Effects under Alternative A

Alternative A would preserve and protect cultural resources, which are of interest to the recreating public. OHV use would continue to be allowed on 5,650 acres around Lovelock Cave and Lovelock Cave BCB. The California National Historic Trail would also be preserved for its historic and scenic values, thereby continuing to provide a unique recreational opportunity. OCTA Class I, II, III, IV, and V segments of the National Historic Trails would remain open to OHV use.

Management measures and use restrictions to protect cultural resources would also limit and change recreational use. Physical conservation measures, such as signs and fences, would alter recreational settings and experiences and would likely alter use patterns. Administrative measures, such as mineral withdrawal, closure to public access, and prohibition of OHV use, would preclude recreation in some areas, particularly to those recreationists who depend on motorized transportation to access public lands.

Effects under Alternative B

The effects on recreation from Alternative B would be similar to those under Alternative A. However, Alternative B also protects the viewshed of the Lovelock Cave BCB to VRM Class III, which provides an opportunity for scenic driving, although the level of aesthetic protection is not as great as that under Alternatives C and D.

Effects under Alternative C

The effects on recreation from Alternative C would be similar to those described under Alternatives A and B. However, Alternative C protects the viewshed of the Lovelock Cave BCB to a VRM Class II, which ensures a more scenic driving opportunity over the long term than under Alternatives A and B. Additionally, Alternative C would limit OHV use to existing roads and trails on the 5,650 acres around Lovelock Cave and Lovelock Cave BCB.

Effects under Alternative D

The effects on recreation from cultural resources management under Alternative D would be similar to those described under Alternative C; however, OHV travel management would change from closed to limited to existing roads and trails in areas around Lovelock Cave.

Recreation and Facilities: Effects from Tribal Consultation

Effects Common to All Alternatives

Under all alternatives, management actions would continue to protect traditional religious sites and other areas of concern, which could restrict recreation that interferes with the maintenance and protection of these resources.

Effects under Alternative A

The effects of tribal consultation on recreation and facilities under Alternative A would be the same as those identified under Effects Common to All Alternatives.

Effects under Alternative B

Under Alternative B, recreational activities would be restricted in some areas by use restrictions and other management actions implemented to protect traditional religious sites and other areas of concern.

Effects under Alternative C

The effects on recreation under Alternative C are greater than those under Alternative B because Alternative C uses emergency, temporal, and seasonal closures to protect traditional religious sites and other areas of concern. This would preclude recreational activities in certain areas at various times of the year.

Effects under Alternative D

The effects on recreation under Alternative D would be the same as those described under Alternative C.

Recreation and Facilities: Effects from Paleontological Resources Management

Effects under Alternative A

Alternative A would implement physical conservation measures, such as signs, fences, and administrative conservation, to protect paleontological resources. These measures could restrict or exclude recreation and could also affect recreational settings.

Effects under Alternative B

Activities on public lands would not be authorized under Alternative B if any potential damage to paleontological resources would occur, unless impacts could be mitigated. This restriction could limit recreation in some areas, particularly commercial activities, special events, and OHV use. Alternative B would also implement physical conservation measures, such as signs, fences, and administrative conservation, which would further restrict or exclude recreation and could also affect recreational settings.

Effects under Alternative C

Discretionary activities on public lands would not be authorized under Alternative C if any potential damage to paleontological resources would occur, unless impacts could be mitigated. This restriction could limit recreation in some areas, particularly commercial activities, special events, and OHV use. Like the other three alternatives, Alternative C would implement physical conservation measures, such as signs, fences, and administrative conservation, which would further restrict or exclude recreation and could also affect recreational settings. Additionally, mineral withdrawals, closure of public access, and prohibition of OHV use could occur. Recreation would be precluded to all recreationists in some areas and to those who depend on motorized access in other areas.

Effects under Alternative D

The effects on recreation would be the same as those described under Alternative C.

Recreation and Facilities: Effects from Visual Resources Management

Effects Common to All Alternatives

Visual resources would be managed under all four VRM Class designations, which would allow for varying retention of the existing landscape, depending on the alternative. Greater retention of the viewshed offers recreationists a more primitive experience, but it also restricts potential development of recreational facilities, roads, and trails.

Effects under Alternative A

Alternative A manages visual resources on 7,112,893 acres under all four VRM Class designations, including 56,771 acres with unknown class designations. It designates 420,271 acres as Class I, thereby affording the highest level of visual retention to the greatest number of acres of any of the alternatives. However, it also designates 5,667,437 acres as Class IV, which is the least protective designation and also the greatest number of acres with that designation of any of the alternatives.

Since Class I preserves the viewshed, it offers the most primitive recreation experience. Conversely, it restricts potential development of recreational facilities, roads, and trails that could be in demand by other recreationists. Class IV allows for major modifications to the landscape, so development of recreational facilities, roads, and trails would be allowed.

Alternative A designates 346,302 acres as Class II, which retains the existing landscape but allows for a low level of change, and 678,883 acres as Class III, which mandates partial retention of the viewshed. These two classes would allow a mixed recreational setting and experience, consisting of a relatively primitive viewscape, while allowing some recreational (and other) development to occur.

Effects under Alternative B

Alternative B manages visual resources on 7,219,706 acres under all four VRM Class designations. It designates 417,605 acres as Class I, 391,203 acres as Class II, 2,302,933 acres as Class III, and 4,107,965 acres as Class IV. The number of acres designated as Class I is the same as for Alternatives C and D. However, the number of acres for Class II, which retains the landscape and allows for a low level of change, is much lower than Alternatives C and D. The number of acres in Class III is more than under Alternative A but less than under the other alternatives, and the number in Class IV is the second greatest of any of the alternatives. Overall, Alternative B allows for the greatest potential change in the viewscape. This reduces the area available with a primitive viewscape, thereby reducing the amount of that recreational setting and experience. It also allows for the most potential development within the viewshed, some of which could benefit recreationists who desire a less primitive experience.

Effects under Alternative C

Alternative C manages visual resources on 7,219,676 acres under all four VRM Class designations. They designate 417,605 acres as Class I, 3,083,211 acres as Class II, 2,807,858 acres as Class III, and 911,002 acres as Class IV. The number of acres designated as Class I is the same as for Alternatives B and D. However, the number of acres for Class II, which retains the existing landscape and allows for a low level of change, is the greatest number of acres of any of the alternatives. This largely preserves a primitive recreational setting and experience. The number of acres in Class IV is much

less than under Alternatives A or B and would not allow as much change in the viewshed or as much recreational development.

Effects under Alternative D

Alternative D manages visual resources on 7,233,431 acres under all four VRM Class designations. It designates 417,605 acres as Class I, 2,780,416 acres as Class II, 3,073,906 acres as Class III, and 961,504 acres as Class IV. The number of acres designated as Class I is the same as for Alternatives B and C. The number of acres for Class II is less than Alternative C, and the number of acres for Class III is greater than Alternative C. Class IV acres are much less than Alternatives A and B. Overall, Alternatives C and D allow roughly the same amount of change in the viewscape and would have similar effects on recreation.

Recreation and Facilities: Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from cave and karst resource management.

Effects under Alternative A

Alternative A does not address management of cave and karst resources, so it would have no impact on recreation.

Effects under Alternative B

Under Alternative B, implementing seasonal closures, avoidance, and fencing to protect sensitive features and bats could temporarily preclude recreation activities at or near karst features.

Effects under Alternative C

Alternative C could be more restrictive of recreation at or near karst features by prohibiting surface-disturbing activities within 500 feet of natural caves or karsts.

Effects under Alternative D

The effects of cave and karst resources management on recreation and facilities under Alternative D would be the same as those identified under Alternative B.

Recreation and Facilities: Effects from Livestock Grazing Management

Effects Common to All Alternatives

Under all alternatives except Alternative C Option 2, the presence of livestock and rangeland facilities, could affect recreational settings, use patterns, and activities. Fencing in particular would disrupt recreation. Any types of use requiring cross-country travel could be affected, but OHV use would be most affected by fencing. Alternatives differ in the acreage of overlap between grazing and recreation.

Effects under Alternative A

Under Alternative A, livestock grazing management would result in the continued presence of cattle, sheep, and rangeland facilities on 8,228,528 acres. Only 293,447 acres would be closed to grazing. The effects of this would be the same as those described under Effects Common to All Alternatives.

Effects under Alternative B

The number of acres open and closed to grazing and the effects on recreation would be the same as those described under Alternative A.

Effects under Alternative C

Option 1

Livestock grazing management would result in the continued presence of cattle, sheep, and rangeland facilities on 8,228,845 acres, which is a decrease of 2,683 acres from the current condition (Alternative A). However, that represents a decrease of less than one percent of the total acreage currently available to grazing, which would not be a discernible change to a recreationist. Only 296,130 acres would be closed to grazing. The effects on recreation would be virtually identical to those described under Alternatives A and B.

Option 2

The effects on recreation are the greatest under this option since no acres would be open to livestock grazing and 8,521,975 acres would be closed. No conflicts between livestock and recreationists would occur; the presence of livestock and their effect on recreational settings would be eliminated, and no effects on OHV use from new range facilities, particularly fencing, would occur.

Effects under Alternative D

Livestock grazing management would result in the continued presence of cattle, sheep, and rangeland facilities on 8,195,637 acres, which is a decrease of less than one percent from the current condition (Alternative A). Only 326,337 acres would be closed to grazing. This represents about a 10 percent increase in the number of closed acres over the current condition and is the greatest number of acres closed to grazing under any of the alternatives, except for Option 2 of Alternative C. However, the number of closed acres is such a small percentage of the total acreage open to grazing that the effects on recreation would likely not be noticeable to recreationists. Therefore, the effects on recreation would be similar to the other alternatives.

Recreation and Facilities: Effects from Minerals Management

Effects Common to All Alternatives

General

Minerals management activities involving heavy equipment, new roads, well pads, and other facilities would directly affect recreationists in the short term by restricting areas where these activities are occurring. Over the long term, surface disturbances that create effects on the scenic quality and the

natural landscape would indirectly affect recreation experiences. Minerals management could affect all areas except those closed to mineral activities. NSO requirements would alleviate impacts on recreation in those designated areas. The individual alternatives differ in the acreage and location of closures and NSO requirements; however, it is possible that the amount of actual minerals activity would not differ among alternatives.

Effects under Alternative A

Under Alternative A, the fewest acres would be closed to mineral activities or would have NSO requirements. Consequently, Alternative A would be the most likely to have effects common to all alternatives.

Effects under Alternative B

A larger area would be closed to mineral activities under Alternative B than under Alternative A, and a larger area would be subject to NSO requirements. Therefore, Alternative B would be less likely than Alternative A to affect recreation, as described under Effects Common to All Alternatives.

Effects under Alternative C

The greatest restrictions on mineral activities would occur under Alternative C, which therefore would be the least likely of all alternatives to affect recreation, as described under Effects Common to All Alternatives.

Effects under Alternative D

The likelihood that mineral activities would affect recreation under Alternative D would be intermediate between Alternatives B and C because the area closed or under NSO requirements would be intermediate between these two alternatives.

Recreation and Facilities: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

Interpretive programs and activities would be maintained and enhanced under all alternatives. Public information would be provided for those natural and cultural sites designated for public use (such as Lovelock Cave). Partnerships with non-BLM entities would be pursued to accomplish management objectives, including visitor outreach programs. Lands would be managed to provide dispersed and water-based recreation, and SRMAs would continue to be managed. Existing facilities in Water Canyon and on the Bloody Shins trail network would continue to be maintained. Thus, a wide array of recreational settings and opportunities would continue to exist on WD lands.

Effects under Alternative A

In addition to the effects common to all alternatives, the number of SRMAs would remain constant, and the Pine Forest SRMA would remain at 37,259 acres. SRPs would continue to be issued on a case-by-case basis, and resources would continue to be protected by use restrictions, stipulations, and mitigation measures. Most of the planning area, 6,789,612 acres, would continue to be open to OHV use. The number of acres closed to OHV use (17,698) would decrease slightly. WSAs would

be managed to limit OHV use to existing ways and trails, thereby limiting motorized access in those areas but also protecting primitive recreation opportunities. Overall, the current array of recreational settings and opportunities would continue under Alternative A, and current use patterns also are likely to remain relatively constant.

Effects under Alternative B

In addition to the effects common to all alternatives, Alternative B would foster the development of volunteer, restoration, and stewardship programs and would foster scientific research for WD lands. This would improve the condition of resources within the WD over the long term, thereby enhancing recreational opportunities. Educational outreach programs would also benefit the recreating public through increased awareness of activities that impact public lands and methods to reduce such impacts. Implementing an adaptive management model would provide recreation experiences and protect resources.

The Winnemucca Resource Area would be designated as an ERMA containing 6,013,947 acres, all of which would be open to dispersed recreation. Numerous regulations would be instituted to protect resources, which would maintain the quality of the recreational setting over the long term.

Three SRMAs containing RMZs and 1,122,373 acres would be designated under Alternative B. In addition, the Pine Forest SRMA would expand to include 3 RMZs and 98,874 acres. Each SRMA and RMZ would be managed to provide specific experience opportunities, including motorized and mechanized use, primitive areas, and isolation and close-to-town experiences. Potential activities include hiking, fishing, camping, backpacking, mountain biking, picnicking, enjoying interpretive sites, horseback riding, and ATV and OHV riding.

Most of the planning area, 5,743,198 acres, would allow limited OHV use. Only 1,460,200 acres would be open, and 17,698 acres would continue to be closed to OHV use. Recreationists who depend on motorized access to public lands would have their recreational opportunities limited by this alternative; however, they would not be precluded from recreating on WD lands. Over the long term, recreational settings would likely be enhanced by reducing resource degradation associated with open OHV use.

Effects under Alternative C

In addition to the effects common to all alternatives, the management actions and effects on recreation from Alternative C would be the same as under Alternative B, with some exceptions. A total of 7,168,451 acres would be designated as an ERMA, which is an increase of 1,154,889 acres over Alternative A. One SRMA containing a total of five RMZs and 151,979 acres would be designated under Alternative C. The array of recreational opportunities managed for in the SRMA would be more limited than under Alternative B, primarily providing close-to-town activities rather than isolated primitive experiences.

Alternative C uniquely affects OHV use. Most of the planning area, 7,187,575 acres, would allow limited OHV use, which is the most acres designated as limited OHV use under any of the alternatives. No acres would be designated as open OHV use, which distinguishes Alternative C as the only alternatives that completely preclude open OHV use. Additionally, 43,521 acres would be closed, which represents the greatest number of acres closed to OHV use under any of the

alternatives. OHV users who enjoy open use would be most affected by these options. However, since most of the area remains available to limited OHV use, those who depend on motorized access to public lands would not be precluded from recreating on WD lands. Like Alternative B, over the long term, recreational settings would likely be enhanced by reducing resource degradation associated with open OHV use.

Effects under Alternative D

In addition to the effects common to all alternatives, the management actions and effects on recreation from Alternative D are the most similar to those described under Alternative B. The differences lie in OHV use designations and their subsequent recreational effects. Under Alternative D, 6,925,414 acres would allow limited OHV use. This represents most of the lands in the WD. A total of 288,105 acres would be designated as open OHV use, and 17,577 acres would be closed. Fewer acres would be open than under Alternatives A or B. The effects from limited OHV use designations are slightly greater than those under Alternative B.

Recreation and Facilities: Effects from Renewable Energy Management

Effects Common to All Alternatives

The leasing of public lands for wind energy development and the authorization of new renewable energy ROWs could have effects similar to those described under Effects from Minerals Management, Effects Common to All Alternatives. Similar to minerals management, the probability of effects is higher for those alternatives with the smallest avoidance and exclusion areas; however, it is possible that the amount of actual renewable energy activity would not differ among alternatives.

Effects under Alternative A

Alternative A would maintain existing exclusion zones, which would be protected from renewable energy use and would allow continued recreational use. The area covered by ROW exclusion would be greater than under Alternative B (with no exclusion zones) but less than under Alternatives C and D. Therefore, it is more likely that Alternative A would affect type and level of recreation than Alternatives C and D.

Effects under Alternative B

No exclusion zones for renewable energy ROWs would be designated under Alternative B, so that alternative is the most likely to affect recreation within the WD.

Effects under Alternative C

Alternative C would designate the largest area for exclusion and, therefore, would be the least likely to affect recreation activities and experiences.

Effects under Alternative D

Under Alternative D the area covered by ROW exclusion is greater than under Alternatives A and B but less than under Alternative C. Therefore, the likelihood that Alternative D would affect recreation is intermediate between Alternatives A and C.

Recreation and Facilities: Effects from Transportation and Access Management

Effects Common to All Alternatives

All alternatives would provide access to recreation within the WD.

Effects under Alternative A

Under Alternative A, roads that are presenting problems to the environment would be improved or decommissioned from the system inventory. Recreational access would thereby either be improved or eliminated in some areas, depending on the management action. Over the long term, recreational use patterns would likely be affected, and the quality of recreation experiences would be maintained through protection of the environment. Alternative A would have the greatest effect on recreation of any of the alternatives.

Effects under Alternative B

Under Alternative B, roads would only be decommissioned from the system inventory if alternative access were provided, thereby eliminating the possibility that recreationists would be precluded from motorized access via road in some areas. However, environmental degradation from roads would continue in some areas, which would diminish the quality of recreational experiences over the long term.

Effects under Alternative C

Management actions and effects on recreation under Alternative C would be the same as those described under Alternative B.

Effects under Alternative D

Management actions and effects on recreation under Alternative D would be the same as those described under Alternative C.

Recreation and Facilities: Effects from Lands and Realty Management

Effects Common to All Alternatives

Public lands would be retained, which would ensure that a variety of recreational settings and opportunities would continue to exist on WD lands.

Effects under Alternative A

Under Alternative A, management would acquire lands that provide public access for recreation and developed recreation sites. Increased opportunities to access WD lands would result, as would increased access to developed recreation. Over the long term, the amount of recreational use could increase, and recreational use patterns could be altered.

Effects under Alternative B

Under Alternative B, recreation access and recreation sites would not be given priority for acquisition as much as under Alternative A. Increased recreational opportunities or access could occur as a result of acquisition under this alternative.

Effects under Alternative C

The effects on recreation under Alternative C, are slightly greater than those described under Alternative A since management would maximize opportunities to acquire lands with recreation access.

Effects under Alternative D

The effects on recreation under Alternative D would be the same as those described under Alternative A.

Recreation and Facilities: Effects from ACEC/RNA Management

Effects Common to All Alternatives

Measures to protect valuable and sensitive resources within ACEC designations would create an effect on recreationists throughout the WD. Visitors to the ACECs could take part in wildlife viewing, sightseeing, hiking, and camping, all while protecting important values within the designation both for current and future generations of recreationists. Conflicts between motorized and nonmotorized recreation users would be minimized in these areas, improving the quality of the recreation experience for all users. Some restrictions on recreation could occur to protect resource values.

Effects under Alternative A

Alternative A would maintain the existing 60-acre Osgood Mountains ACEC, allowing for recreation within the ACEC while protecting its important values. However, no new ACECs would be created, thereby limiting protection of other important areas for future recreationists. Other effects would be the same as those discussed under Effects Common to All Alternatives.

Effects under Alternative B

Alternative B would maintain existing ACECs, thereby continuing recreation within the ACECs, while protecting their important values. However, creation of new ACECs would be avoided, thereby limiting protection of other important areas for future recreationists. Other effects would be the same as those discussed under Effects Common to All Alternatives.

Effects under Alternative C

Alternative C would designate four ACECs, allowing recreation within the ACECs, while protecting their important values for future recreationists. The Pine Forest SRMA and Pine Forest ACEC have compatible recreation management objectives.

Effects under Alternative D

Management actions and effects on recreation are identical to those described under Alternative C.

Recreation and Facilities: Effects from Backcountry Byways Management

Effects Common to All Alternatives

Under all alternatives, designation of BCBs creates additional opportunities for scenic drives for recreationists, currently one of the most popular types of dispersed recreation (as identified in Table 3-37). New BCBs also could increase visitor use in more remote areas. No discernible difference in impacts would occur for the individual alternatives.

Recreation and Facilities: Effects from National Historic Trails Management

Effects Common to All Alternatives

Under all alternatives, maintenance of trails to preserve historic, cultural, and scenic values preserves the array of recreational opportunities available on WD lands. There would be no difference in impacts for the individual alternatives.

Recreation and Facilities: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from WSR management.

Effects under Alternative A

Under Alternative A, eligible river corridors would be given protection through continued interim protective management. This would provide additional measures within the 13,583 acres of WSR corridors that would preserve the ORVs that led to eligibility. Although no facilities are currently planned, construction of new facilities would be subject to restrictions to ensure the preservation of ORVs..

Effects under Alternative B

There would be no impacts on recreation or facilities from WSR management under Alternative B.

Effects under Alternative C

Under this alternative, eligible river corridors would be given protection through the development of Comprehensive River Management Plans. This would provide additional measures within the 13,583 acres of WSR corridors that would preserve the ORVs that led to eligibility. The Comprehensive River Management Plans would include visitor capacity determinations and management actions to ensure that the increased visitation that may accompany designation would not lead to degradation of ORVs.

Effects under Alternative D

Under this alternative, there likely would be no impacts on recreation or facilities from WSR management as long as WSA, priority habitat, and priority watershed management, as outlined in the remainder of the RMP, are implemented. In the case that these management actions are not implemented or are removed after implementation, interim protective management measures would be implemented within the 13,583 acres of eligible WSR corridors, which would cause effects identical to those described under Alternative A.

Recreation and Facilities: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

Under all alternatives, mitigation measures would minimize adverse impacts on wilderness characteristics, thereby helping to ensure that backcountry and primitive settings would continue to be available to recreationists seeking those experiences.

Managing WSAs to maintain wilderness characteristics would provide the opportunity for primitive wilderness recreation until the lands are either designated as wilderness or are released for other recreational uses, such as OHV use. Under all alternatives, the same area would be managed as WSAs, and there would be no difference in the impacts of the individual alternatives.

Effects under Alternative A

Mitigation measures would minimize adverse impacts on wilderness characteristics from multiple use, which would help to ensure that backcountry and primitive experiences would continue to be available to recreationists seeking those experiences.

Effects under Alternative B

The effects on recreation would be the same as those described under Alternative A.

Effects under Alternative C

Under Alternative C mitigation measures would minimize adverse impacts on wilderness characteristics, which would help to ensure that backcountry and primitive experiences would continue to be available to recreationists seeking those experiences. Recreation is affected the most under Alternatives C and D, which would be the same.

Effects under Alternative D

Alternative D would affect recreation in the same way as under Alternative C.

Recreation and Facilities: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Developing and maintaining wildlife viewing areas under all alternatives would increase recreational opportunities to view and photograph wildlife.

Effects under Alternative A

In addition to the impacts described under Effects Common to All Alternatives, Alternative B could alter recreational use patterns by increasing the amount of recreation in areas where there is currently little or no recreation.

Effects under Alternative B

The effects from watchable wildlife viewing sites management under Alternative B would be the same as those described under Alternative A.

Effects under Alternative C

The effects from watchable wildlife viewing sites management under Alternative C would be the same as those described under Effects Common to All Alternatives.

Effects under Alternative D

The effects from watchable wildlife viewing sites management under Alternative D would be the same as those described under Alternative A.

Recreation and Facilities: Effects from Public Health and Safety Management

Effects Common to All Alternatives

Under all alternatives, management actions to remediate hazardous and solid waste pollution, to control and clean up illegal dumping and littering, and to educate and warn the public about potential hazards would increase the safety of recreational activities on WD lands. There would be no difference in impacts for the individual alternatives.

Recreation and Facilities: Effects from Sustainable Development Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from sustainable development management.

Effects under Alternative A

Alternative A does not address management for sustainable development; therefore, it would have no impact on recreation. No land would be disposed of for this use, so no decrease in land available for recreation would occur.

Effects under Alternative B

Under Alternative B, allowing for the disposal of public lands to facilitate post-operation reuse and to assist the economic development of local communities could decrease the area of public lands available for recreation activities. Sustainable development could reduce recreation access to some areas.

Effects under Alternative C

Under Alternative C, if lands that could be reused for sustainable development could provide a higher public benefit, such as recreation, they would not be subject to disposal. Sustainable development management under Alternative C makes it the least likely of the action alternatives to reduce the amount of land available for recreation in the WD. However, sustainable development could reduce recreation access to some areas.

Effects under Alternative D

The effects from sustainable development on recreation and facilities under Alternative D would be the same as those identified under Alternative B.

Recreation and Facilities: Cumulative Effects

Past and Present Actions

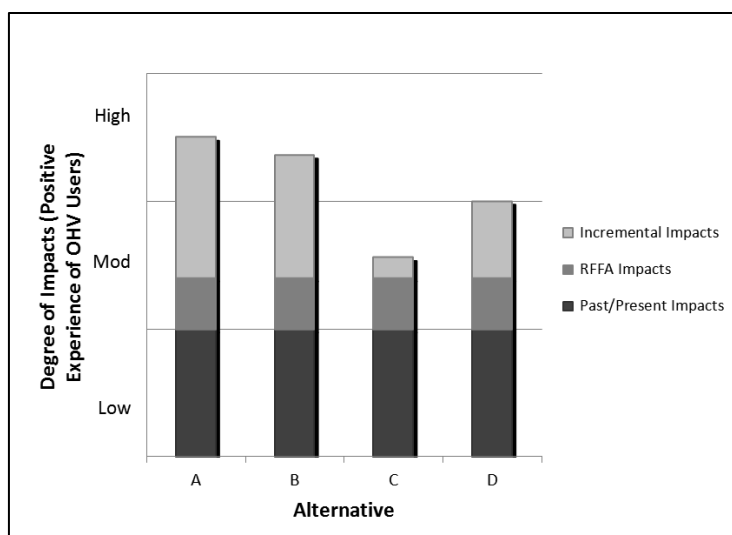
Few impacts on recreation from livestock grazing have occurred. Minerals, Renewable Energy development and Lands and Realty actions have limited recreation access into areas, especially during construction of facilities. Few impacts have occurred from wildlife and sensitive species management. Impacts have been limited to seasonal restrictions to protect bighorn sheep lambing areas. Recreation access has also been restricted during times of WHB gathers or during wildfire, necessary for public safety.

Reasonably Foreseeable Actions

Impacts from livestock grazing or no grazing on recreation would continue to be minimal and would be dependent on the recreation experiences desired. Continued expansion of minerals, renewable energy, and lands and realty projects would increase the number of acres not available for public access. OHV travel management restrictions would limit or close areas to OHV use depending on the number and types of travel designations. Impacts from special status species management would have similar impacts on those described under past and present actions.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Effects would include limited access based on mineral, energy and rights of way development. Travel management would further limit access or types of use in areas. These impacts would depend on areas designated as open, closed, or limited through travel management planning. Overall adverse incremental impacts would range from low to moderate. Conversely, positive experiences for OHV users would be influenced by the number of acres open to travel (Figure 4-10).

Figure 4-10. Cumulative Impacts of OHV Travel Management on OHV Users by Alternative

Degree of Impact Assumptions: Positive user experience would increase based on the number of acres open to OHV travel management.

4.3.4 Renewable Energy

Summary

All four alternatives contain actions that would affect the availability of lands for energy development and that could limit the ability to harvest fuels for biomass development. In general, the alternatives with ROW exclusion areas containing the lowest acreage favorable to renewable energy development and with the greatest potential for biomass fuels would have the highest potential for renewable energy development. The amount of land available for disposal out of public ownership would be different for each of the four alternatives and could affect renewable energy development. Although lands that would be disposed of could be used for renewable energy, there is no legal mandate for this use under private or other types of ownership; therefore, renewable energy development could be affected where the land available for disposal also contains renewable energy resources. Disposal probably would result in a lesser effect than ROW exclusion.

Alternative B has the greatest potential for renewable energy development, since there would be no ROW exclusion areas and a relatively high potential for biomass fuels availability. Although Alternative B does not have the lowest acreage available for disposal, it is lower than current conditions (Alternative A). Actions under Alternative C present the least favorable conditions for renewable energy development; Alternative C has more restrictions on fuels treatments and harvest and a relatively high percentage of favorable areas within ROW exclusion areas, even though it has the lowest acreage available for disposal. The potential for renewable energy development under Alternative D would be intermediate between Alternatives B and C. Table 4-48 identifies the indicators that were used to analyze effects on renewable energy under each alternative.

Table 4-48
Summary of Effects on Renewable Energy—Alternatives A, B, C, and D

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
ROW area available for renewable energy development	No change	No ROW exclusion areas	58,580 acres of biomass, 81,514 acres of CSP, 66,050 acres of PV, and 1,271,778 acres of wind within ROW exclusion areas	54,488 acres of biomass, 78,886 acres of CSP, 0 acres of PV, and 627,240 acres of wind within ROW exclusion areas
Biomass availability from fuel treatments and timber harvesting	No change—limited potential	Highest potential	Lowest potential	Intermediate potential
Lands that could be affected by disposal	No change: 114,380 acres of biomass, 409,465 acres of CSP, 27,202 acres of PV, and 2,989,026 acres of wind within areas available for disposal	Less area for disposal: 113,293 acres of biomass, 196,574 acres of CSP, 1,507 acres of PV, and 2,128,541 acres of wind within areas available for disposal	Least area available for disposal: 57,157 acres of biomass, 164,886 acres of CSP, 42 acres of PV, and 1,215,963 acres of wind within areas available for disposal	Essentially the same area as for Alternative C: 58,628 acres of biomass, 167,409 acres of CSP, 86 acres of PV, and 1,281,958 acres of wind within areas available for disposal

Source: GIS calculations of BLM (2007e) data

Methods of Analysis

Methods and Assumptions

Renewable energy resources within the WD, including solar and wind energy and biomass fuels, require a ROW to be developed on BLM lands. Management actions could impact renewable energy resources if they resulted in the following changes:

- Directly or indirectly changed the acreage available for ROWs within areas considered favorable for solar power development, within areas with medium or high wind resource potential, or within areas that have biomass development potential;
- Restricted land availability and surface-disturbing activities to protect other resources;
- Affected fuel supply as a result of changes in timber harvesting and fuel treatment activities;
- Resulted in the disposal or exchange of public lands; or
- Caused changes to ROW authorizations.

The assumption is that logging activity and vegetation treatments are directly related to the availability of forest byproducts (wood) that can be used as biomass fuel. Effect determinations are based on the extent to which each alternative would result in these changes.

Renewable Energy: Effects from Air Quality Management

Effects Common to All Alternatives

Dust abatement requirements for roads and project construction could increase the costs of renewable energy development within the WD under all alternatives.

Effects under Alternative A

The effects from air quality management on renewable resources would be the same as under Effects Common to All Alternatives.

Effects under Alternative B

Dust control requirements in excess of those described under Alternative A could increase the costs of renewable energy development for construction of access roads and wind or solar energy storage and generation sites. Therefore, Alternative B would be likely to have a greater effect on the costs of renewable energy development than Alternative A.

Effects under Alternative C

Effects would be the same as under Alternative B.

Effects under Alternative D

Effects would be the same as under Alternative B.

Renewable Energy: Effects from Geology Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from geologic resource management.

Effects under Alternative A

Geology management under Alternative A would not restrict the development of renewable energy resources.

Effects under Alternative B

Unless renewable energy resources occurred at the sites of unique geologic features, there would be no restrictions on the development of renewable energy resources from geology management under Alternative B. If renewable energy development were desired at the sites of unique geologic features, restrictions on disturbance to protect these resources could preclude development or mitigation measures could be required that would increase the costs of development.

Effects under Alternative C

The effects from geology management under Alternative C would be similar to those under Alternative B, except that if renewable energy resources were present at sites of unique geologic

features, these resources would be precluded from development because ROWs would be excluded. Under these circumstances, Alternative C would be the most restrictive of the alternatives.

Effects under Alternative D

The effects from geology management under Alternative D would be similar to those under Alternative B.

Renewable Energy: Effects from Soil Resources Management

Effects Common to All Alternatives

Under all of the alternatives, soil resources management would not reduce the area available for developing renewable energy resources. Costs associated with implementing BMPs and mitigation measures to reduce erosion would increase the costs of renewable energy development.

Effects under Alternative A

The effects of soil resources management under Alternative A would be the same as identified under Effects Common to All Alternatives.

Effects under Alternative B

The effects from soils management under Alternative B would be similar to those described under Alternative A, except that Alternative B would be more likely to increase development costs due to soil salvage, reclamation, and mitigation requirements.

Effects under Alternative C

The area available for renewable energy development would be smaller under Alternative C than under Alternative B, because of potential seasonal closures to eliminate surface disturbance of biological crusts and to reduce compaction. Alternative C, therefore, would be more likely to prevent development of some renewable energy resources or would increase the costs of developing these resources.

Effects under Alternative D

Restrictions to reduce erosion under Alternative D would be intermediate between Alternatives B and C, as would the acreage covered by seasonal restrictions. Therefore, the potential for effects on renewable energy resources development under Alternative D would be intermediate between Alternatives B and C.

Renewable Energy: Effects from Water Resources Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from water resources management.

Effects under Alternative A

No effects from water resources management would occur under Alternative A, since no specific management actions have been identified for priority watershed or wellhead protection areas that would restrict renewable energy ROWs.

Effects under Alternative B

Alternative B could restrict development or increase the costs to develop renewable energy resources in wellhead protection areas by managing them as ROW avoidance areas. This level of constraint would be less likely to affect energy resources development than those called for under Alternatives C and D.

Effects under Alternative C

Alternative C would impose the greatest constraints on energy resources development in priority watershed areas and wellhead protection zones by managing them as ROW exclusion areas.

Effects under Alternative D

The ROW restrictions proposed under Alternative D to protect priority watersheds and wellhead protection zones would be intermediate between Alternatives B and C because only portions of priority watersheds containing threatened and endangered species habitat would be managed as exclusion areas and priority watersheds containing municipal supplies and wellhead protection zones would be considered avoidance areas. The effects on energy resources development and costs in priority watershed areas and wellhead protection zones would be intermediate between Alternatives B and C.

Renewable Energy: Effects from Vegetation—Forest and Woodland Products Management

Effects Common to All Alternatives

There is little or no economic potential for biomass due to few stands of pinyon and juniper within the WD. Implementation of mitigation measures, BMPs, and SOPs would increase costs for renewal energy exploration and development

Renewable Energy: Effects from Vegetation—Invasive and Noxious Species Management

Effects Common to All Alternatives

Measures to limit the spread of weeds would increase the cost of solar, geothermal, and wind power development. Weed control would enhance the potential for reclamation success at these sites and would slowly reduce the costs as native vegetation re-establishes.

Renewable Energy: Effects from Chemical and Biological Control

Effects Common to All Alternatives

There would be no impacts on renewable energy related to chemical and biological controls.

Renewable Energy: Effects from Vegetation—Rangeland Management***Effects Common to All Alternatives***

Rangeland management would include management actions to reclaim or rehabilitate disturbed areas created by renewable energy actions. This increases the cost to develop renewable energy while reducing impacts on soils and vegetation.

Renewable Energy: Effects from Vegetation—Riparian and Wetlands Management***Effects Common to All Alternatives***

There would be no effects on renewable energy from riparian and wetlands management actions common to all alternatives.

Effects under Alternative A

There would be no effects on renewable energy from riparian and wetlands management actions under Alternative A.

Effects under Alternative B

The potential for closing or relocating routes to protect riparian areas could limit the development of renewable energy resources where these types of routes would be required. In addition, if BMPs for ROWs resulted in restrictions on ROWs or increased costs for using ROWs, renewable energy resource development in these areas would be further limited.

Effects under Alternative C

Effects would be the same as under Alternative B.

Effects under Alternative D

Effects would be the same as under Alternative B.

Renewable Energy: Effects from Fish and Wildlife Management***Effects Common to All Alternatives***

Under all alternatives, use restrictions to maintain or improve wildlife habitat could eliminate some areas from possible renewable energy resource development.

Effects under Alternative A

The effects of use restrictions under Alternative A would be the same as those identified under Effects Common to All Alternatives; however, flexible restrictions on stream bank alterations and maintaining access to streams while avoiding erosion also could retain access for renewable energy uses.

Effects under Alternative B

Alternative B would have the lowest potential to adversely affect ROWs for renewable energy development. It would maintain multiple uses and would allow surface-disturbing activities such as ROWs and access roads for renewable energy development.

Effects under Alternative C

Of the action alternatives, Alternative C has the greatest potential to affect renewable energy development. Alternative C would require restrictions on surface disturbance to protect migratory birds, thus limiting surface-disturbing activities, including ROWs and access roads for renewable energy development. Renewable energy use restrictions would not allow development within any of the PMUs. Opportunities for development would not occur in those areas.

Effects under Alternative D

Effects on renewable energy development under Alternative D would be intermediate between Alternatives B and C. About 1,196,052 acres would not be available for renewable energy development. Alternative D designates an intermediate level of use restrictions to protect wildlife and wildlife habitat, while allowing for multiple uses where conditions are appropriate. This could allow for more renewable energy ROWs and access roads than under Alternative C but fewer than under Alternative B.

Renewable Energy: Effects from Special Status Species Management

Effects Common to All Alternatives

Under all alternatives, use and surface disturbance restrictions to protect special status species would place limitations on renewable energy development. ROW restrictions could reduce the opportunities for renewable energy development.

Effects under Alternative A

The effects on renewable resources from special status species management under Alternative A would be similar to those described under Effects Common to All Alternatives. Implementation of buffer zones and seasonal use restrictions would prohibit renewable energy development within 2 miles of active leks.

Effects under Alternative B

Under Alternative B, the increased flexibility in applying use and surface disturbance restrictions to protect special status species decreases the likelihood that these restrictions would affect availability of ROWs for renewable energy development, as compared with current conditions. Implementation of buffer zones and seasonal use restrictions would prohibit renewable energy development within 2 miles of active leks.

Effects under Alternative C

Under Alternative C, the decreased flexibility in applying use and surface disturbance restrictions to protect special status species increases the likelihood that these restrictions would reduce the availability of ROWs for renewable energy development, as compared with current conditions.

Effects under Alternative D

The effects from special status species management under Alternative D would be the same as those described under Alternative B. Alternative D includes the identification of exclusion zones possibly affecting the availability of ROWs for renewable energy development.

Renewable Energy: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Protection measures for WHB may prohibit or limit certain activities in HMAs. SOPs, mitigation measures, and foaling season timing restrictions (March 1 – June 30) could impact the timeline of a project.

Renewable Energy: Effects from Wildland Fire Management

Effects Common to All Alternatives

There would be no restrictions under any of the alternatives to the amount of land open to renewable energy developments, based on wildland fire management objectives or actions. Implementing fuel treatments could protect renewable energy developments and infrastructure from wildfire. Protection of property is a suppression priority under the response to wildfires, based on social, legal, and ecological consequences of the fire.

Renewable Energy: Effects from Cultural Resources Management

Effects Common to All Alternatives

Cultural resources management would affect renewable energy projects through VRM requirements (i.e., trail sections would be managed as VRM Class II to Class IV). The impacts would be similar to those described under Effects from Visual Resource Management.

Renewable Energy: Effects from Tribal Consultation

Effects Common to All Alternatives

There would be no effects common to all alternatives from tribal consultation.

Effects under Alternative A

Alternative A would not impose development stipulations, use restrictions, or closures to protect tribal sites and would be the least likely to affect ROWs for renewable energy development.

Effects under Alternative B

Alternative B would have a higher potential for effects on renewable energy resources than Alternative A because it provides for stipulations and use restrictions to protect tribal sites, which could restrict ROWs for renewable energy development. Alternative B would be less likely to affect renewable energy resources than Alternatives C and D.

Effects under Alternative C

Alternative C would have a higher potential for effects on renewable energy resources than Alternatives A and B. A greater level of restriction to protect tribal sites would be imposed under Alternative C, which could further restrict the availability of ROWs for renewable energy resource development.

Effects under Alternative D

The effects on renewable energy from tribal consultation under Alternative D would be the same as those described under Alternative C.

Renewable Energy: Effects from Paleontological Resources Management

Effects Common to All Alternatives

Under all alternatives, restrictions to public access for the protection of paleontological resources could restrict the establishment of new renewable energy ROWs. The percentage of land on which this would occur is anticipated to be very small and in general ROWs could be routed around paleontological sites.

Effects under Alternative A

Alternative A would have the fewest restrictions to public access for the protection of paleontological resources. Authorization for surface-disturbing activities that might damage paleontological resources would not be required; therefore, Alternative A would be the least likely to limit ROWs and access to renewable energy resources.

Effects under Alternative B

The effects on renewable energy resources from paleontological resources management under Alternative B would be similar to those identified under Alternative A, except that authorization for surface-disturbing activities would be required to protect paleontological resources. Therefore, the potential effects on the development of renewable energy resources under Alternative B would be greater than under Alternative A but less than under Alternatives C and D.

Effects under Alternative C

Under Alternative C, implementing such actions as mineral withdrawal and closure of public access to protect vulnerable paleontological deposits could affect the level of renewable energy development that could occur in these areas.

Effects under Alternative D

The effects on renewable energy from paleontological resources management under Alternative D would be the same as those described under Alternative C.

Renewable Energy: Effects from Visual Resources Management

Effects Common to All Alternatives

Under all alternatives, managing land as VRM Class I or II could restrict the establishment of new renewable energy ROWs.

Effects under Alternative A

Under Alternative A, managing 766,573 acres as VRM Class I and II could limit renewable energy resource development by restricting ROWs.

Effects under Alternative B

Alternative B would manage 808,808 acres as VRM Class I and II. This alternative would be the least likely to affect renewable energy resource development, since the fewest acres would have restrictions based on VRM Class I and II guidelines.

Effects under Alternative C

Alternative C has the most acreage to be managed as VRM Class I and II (3,500,816 acres); therefore, this alternative would place the most restrictions on renewable energy resource development based on VRM Class I and II guidelines.

Effects under Alternative D

Under Alternative D, 3,198,021 acres would be managed as VRM Class I and II, which is a greater area that could be restricted for renewable energy development than Alternatives A and B but less than Alternative C.

Renewable Energy: Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from cave and karst resource management.

Effects under Alternative A

Cave and karst resources management under Alternative A would restrict the development of renewable energy resources.

Effects under Alternative B

Unless renewable energy resources occurred at the sites of caves and karst features, there would be no restrictions resulting from cave and karst management on the development of renewable energy resources under Alternative B. If renewable energy development were desired at the sites of caves

and karst features, mitigation measures to protect these resources could increase the costs of development.

Effects under Alternative C

Cave and karst management under Alternative C would be the most restrictive on renewable energy development near these features, since surface disturbance would be precluded within 500 feet of caves and karst features.

Effects under Alternative D

The effects of renewable energy from cave and karst management would be the same as Alternative B. Alternative D would be more restrictive of renewable energy development activities in the vicinity of cave and karst resources than Alternatives A but less restrictive than Alternative C.

Renewable Energy: Effects from Livestock Grazing Management

Effects Common to All Alternatives

Livestock grazing management would not impact renewable resources under all alternatives, since no restrictions on renewable energy ROWs or access to renewable resources are proposed. No constraints on the construction of access ways to develop renewable resources are identified.

Renewable Energy: Effects from Minerals Management

Effects Common to All Alternatives

Minerals management under all alternatives would not affect ROWs for renewable energy; however, surface occupancy by minerals operations of areas with renewable energy potential would restrict the availability of these areas for development. However, renewable energy project proponents can request the proposed site be segregated from mineral entry for two years.

Effects under Alternative A

Alternative A would have the most area open to all types of minerals operations, so surface use by these operations would be most likely to affect the access to renewable energy resources. Approximately 4,020 acres with high biomass potential, 1,359 acres with high solar potential, and 29,582 acres with high wind potential would be within areas open to surface occupancy by minerals operations.

Effects under Alternative B

The effects of minerals management on renewable energy under Alternative B would be similar to those described under Alternative A, except that fewer acres would be open for surface occupancy by minerals operations. There would be a lower potential under Alternative B for minerals operations to affect access to renewable energy resources than under Alternative A; however, due to the locations of the areas open to minerals activities, approximately the same acreage of high renewable energy potential would be affected as under Alternative A.

Effects under Alternative C

The effects of minerals management on renewable energy under Alternative B would be similar to those described under Alternative A, except that the fewest acres would be open for surface occupancy by minerals operations. Therefore, minerals operations under Alternative C would be the least likely to affect access to renewable energy resources; however, due to the locations of the areas open to minerals activities, a similar acreage of high renewable energy potential would be affected as under Alternative A.

Effects under Alternative D

The potential for effects on renewable energy resources under Alternative D would be intermediate between Alternatives B and C, since Alternative D would have fewer acres open to mining than under Alternative B but more than under Alternative C. However, due to the locations of the areas open to minerals activities, approximately the same acreage of high renewable energy potential would be affected as under Alternative A.

Renewable Energy: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

There would be no restrictions on the amount of land open to renewable resource activities or limits to renewable resource development based on recreation, visitor outreach, and services management objectives or actions under any alternative.

Renewable Energy: Effects from Renewable Energy Management

Effects Common to All Alternatives

All alternatives would provide public lands for renewable energy development, process ROWs for wind energy development for project areas and wind monitoring and testing sites, lease public lands for wind energy development, and authorize ROWs. The BLM also would provide leases or ROWs for biomass and solar energy development under all alternatives and apply appropriate BMPs, land use restrictions, stipulations and mitigation measures.

Effects under Alternative A

Maintaining existing exclusion areas could limit the area available for renewable energy development.

Effects under Alternative B

No acreage is specifically identified for ROW exclusion, which would maximize the area available for renewable energy development.

Effects under Alternative C

Approximately 1,279,481 acres are specifically identified for ROW exclusion. Within this area are 81,514 acres of BLM lands identified as favorable for developing concentrated solar power (CSP) systems, 42 acres of BLM lands suitable for photovoltaic (PV) development, 1,271,778 acres of lands favorable to wind energy development, and 58,580 acres of land favorable for biomass fuels.

Effects under Alternative D

Approximately 699,929 acres are specifically identified for ROW exclusion. Within this area are 78,866 acres of BLM lands identified as favorable for developing CSP systems, no BLM lands suitable for PV development, 627,640 acres of BLM lands identified as favorable for wind energy development, and 54,488 acres of land favorable for biomass fuels. Under Alternative D the designation of approximately 1,783,000 acres as avoidance areas, to protect resources, is more restrictive than Alternatives B and C. Special stipulations would be required to allow ROWs within avoidance areas.

Renewable Energy: Effects from Transportation and Access Management

Effects Common to All Alternatives

All alternatives would continue to provide access throughout the WD, which would maintain access to areas with renewable energy resource potential. However, limitations on access to protect other resources could constrain or increase the costs of renewable energy development.

Effects under Alternative A

Decommissioning roads that are having negative environmental effects and protecting habitat and sensitive species could remove access to areas with high renewable energy resource potential, which could limit the development of these resources.

Effects under Alternative B

Allowing for public input in decommissioning roads to protect habitat and sensitive species could minimize the removal of or the effects of removal of access to areas with high renewable energy resource potential. This would minimize the effects on the development of these resources.

Effects under Alternative C

The effects of transportation and access management under Alternative C would be the same as those described under Alternative A.

Effects under Alternative D

The effects of transportation and access management under Alternative D would be the same as those described under Alternative A. An active road construction, maintenance, stipulations and monitoring program would be implemented.

Renewable Energy: Effects from Lands and Realty Management

Effects Common to All Alternatives

Land tenure adjustments and ROW avoidance and exclusion areas could affect the establishment of new ROWs for the development of renewable energy resources.

Effects under Alternative A

Under Alternative A, approximately 409,465 acres of BLM land identified as favorable for developing CSP systems is within land tenure Zone 3, with lands suitable for possible disposal, and about 27,202 acres of BLM land suitable for PV development is within this zone. Of the BLM lands favorable for wind power development, 2,989,026 acres are in Zone 3. Approximately 114,380 acres of land favorable for biomass fuels are within Zone 3.

The effects of exclusion areas on renewable energy are described above under Effects from Renewable Energy Management.

Effects under Alternative B

Under Alternative B, approximately 196,574 acres of BLM land identified as favorable for developing CSP systems is within the area identified as available for disposal, and about 1,507 acres of BLM land suitable for PV development is within this area. Of the BLM lands favorable for wind power development, 2,128,541 acres are available for disposal. Approximately 113,293 percent of lands favorable for biomass fuels would be available for disposal.

The effects of exclusion areas on renewable energy are described above under Effects from Renewable Energy Management.

Effects under Alternative C

Under Alternative C, approximately 164,886 acres of BLM land identified as favorable for developing CSP systems is within the area identified as available for disposal, and about 42 acres of BLM land suitable for PV development is within this area. Of the BLM lands favorable for wind power development, 1,215,963 acres are available for disposal. Approximately 57,157 acres of lands favorable for biomass fuels is available for disposal.

The effects of exclusion areas on renewable energy are described above under Effects from Renewable Energy Management.

Effects under Alternative D

Under Alternative D, approximately 167,409 acres of BLM land identified as favorable for developing CSP systems is within the area identified as available for disposal; about 86 acres of BLM land suitable for PV development is within this area. Of the BLM lands favorable for wind power development, 1,281,958 acres are available for disposal. Approximately 58,628 acres of land favorable for biomass fuels is available for disposal.

The effects of avoidance and exclusion zones on renewable energy are described above under Effects from Renewable Energy Management.

Renewable Energy: Effects from ACEC/RNA Management

Effects Common to All Alternatives

ACECs require special management to protect a particular resource, which could curtail establishing new renewable energy ROWs in areas designated as ACECs or could increase the costs to develop and operate renewable energy sites.

Effects under Alternative A

Under Alternative A, renewable energy ROWs would not be allowed only in the 60-acre Osgood Mountains ACEC.

Effects under Alternative B

Similar to Alternative A, the Osgood Mountains ACEC also would be designated under Alternative B, but wind energy development would be allowed within its boundaries. Limiting the creation of additional ACECs also could preserve the area that is available to renewable energy development, so Alternative B is the least likely to affect renewable energy ROWs.

Effects under Alternative C

An additional 97,816 acres of ACECs would be designated under Alternative C, as compared to Alternative A. Approximately, 2,705 acres of high wind energy potential falls within the Pine Forest ACEC exclusion area. In addition, there is a small area of wind power potential within the Stillwater ACEC and near the Osgood Mountains ACEC, so Alternative C is more likely to affect renewable energy ROWs than Alternative A. However, the low percentage of lands with renewable energy resources in or adjacent to ACECs is too small for the ACEC designation to have much effect on these resources. No limit was placed on the creation of new ACECs, which could affect the establishment of new renewable energy ROWs.

Effects under Alternative D

The acreage of ACEC/RNA designation under Alternative D is the same as that identified under Alternative C; however, renewable energy ROWs would not be excluded within the Pine Forest ACEC. The same 2,705 acres would be within the Pine Forest ACEC avoidance area, which would require evaluation for incompatible uses and could limit renewable energy ROWs. Therefore, Alternative D would have an effect on renewable energy resources between that of Alternative A and that of Alternative C.

Renewable Energy: Effects from Backcountry Byways Management

Effects Common to All Alternatives

The management of BCBs under all alternatives would not affect renewable energy resources because it would not curtail the establishment of renewable energy ROWs, prohibit access to renewable resources, or restrict construction measures that might be required to develop these resources.

Renewable Energy: Effects from National Historic Trails Management

Effects Common to All Alternatives

Rerouting renewable energy ROWs to avoid crossing Class I sections of the CNHT could increase the costs of renewable energy development under all alternatives. There would be no difference in the avoidance of crossing Class I sections of the CNHT for the individual alternatives and therefore, no differences in the potential for increasing costs.

Renewable Energy: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

It is unlikely that geothermal, wind, or solar renewable energy projects would be proposed within NWSRS eligible river segment corridors, therefore WSR would have no impact on these activities under any alternative.

Effects under Alternative A

Under Alternative A, eligible river corridors would be given protection either through continued interim protective management or the development of Comprehensive River Management Plans. In both cases, hydroelectric projects would not be permitted within the eligible segments. Any hydroelectric project upstream from the eligible segments would likely be subject to special provisions that would prevent alteration of the free flowing nature of eligible segments.

Effects under Alternative B

There would be no impacts on renewable energy from WSR management under Alternative B.

Effects under Alternative C

The effects from WSR management on renewable energy under Alternative C would be the same as those described under Alternative A.

Effects under Alternative D

Under Alternative D, there likely would be no impacts on renewable energy from WSR management as long as WSA, priority habitat, and priority watershed management, as outlined in the remainder of the RMP, are implemented. In the case that these management actions are not implemented or are removed after implementation, interim protective management measures would be implemented within the 13,583 acres of eligible WSR corridors, which would cause effects identical to those described under Alternatives A and C.

Renewable Energy: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

No new specific management actions identified for wilderness study areas management would occur under any of the alternatives that would affect renewable resource ROWs or prevent access to renewable resources. WSAs are currently managed under the IMP.

Under all alternatives, protecting wilderness characteristics could constrain the establishment of new ROWs for renewable energy and could limit access to renewable resources.

Effects under Alternative A

Applying use restrictions on a case-by-case basis to protect wilderness characteristics could limit the level of renewable energy resource development, and mitigation measures required to minimize effects on wilderness characteristics could increase the costs to develop renewable energy resources.

Effects under Alternative B

Alternative B would not apply use restrictions to protect wilderness characteristics and would be the least likely alternative to restrict renewable energy resource development; however, mitigation measures would increase the costs to develop renewable energy resources in a manner similar to that described under Alternative A.

Effects under Alternative C

Alternative C would apply both use restrictions and mitigation measures to reduce effects on wilderness characteristics. This could be more restrictive on the development of renewable energy resources than Alternatives A and B.

Effects under Alternative D

The both use restrictions and mitigation measures associated with wilderness characteristics management under Alternative D would be the same as those described under Alternative C resulting in the same level of restrictions on the development of renewable energy.

Renewable Energy: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Under all of the alternatives, the establishment of watchable wildlife viewing sites would not affect the access to renewable resources, the establishment of renewable energy ROWs, or renewable energy resource development. Therefore, renewable resource development would not be affected by watchable wildlife viewing sites management.

Renewable Energy: Effects from Public Health and Safety—Management

Effects Common to All Alternatives

Under all alternatives, constraining public activities on public lands could restrict access to renewable resources and prevent the establishment of renewable energy ROWs; requirements for fencing, signing, and other actions to protect public safety could increase the costs of renewable energy development.

Renewable Energy: Effects from Sustainable Development Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from sustainable development management.

Effects under Alternative A

Sustainable development is not addressed under Alternative A; therefore, Alternative A would not affect renewable resources.

Effects under Alternative B

The effects of allowing disposal for reuse could increase renewable energy development. For example, equipment and infrastructure left on site by mining operations, such as generators and connections to the power grid, could be used to produce renewable energy.

Effects under Alternative C

The effects from sustainable development management on renewable energy under Alternative C would be the same as those described under Alternative B.

Effects under Alternative D

The effects from sustainable development management on renewable energy under Alternative D would be the same as those described under Alternative B.

Renewable Energy: Cumulative Effects

Past and Present Actions

Past and present impacts resulting from livestock grazing has posed few impacts on renewable energy. Impacts have included additional costs to fence infrastructure to prevent damage from livestock or injury to livestock, secure areas to provide public safety, and to restrict wildlife and WHB.

Permit stipulations and implementation of mitigation measures have affected the design and reclamation of facilities increasing costs. Special status species management has generated additional costs in order to comply with mitigation measures designed to protect sensitive species. Wildfire impacts have included burned infrastructures and potential shut down of operations. Potential impacts have been addressed through construction of strategically placed fuelbreaks and suppression priorities.

Reasonably Foreseeable Actions

Impacts would be similar to the past and present actions for livestock grazing. Mining projects would have few known impacts on renewable energy. Land tenure adjustments may improve long-term renewable energy development based on energy companies being able to acquire public lands near facilities. Designation of priority wildlife habitat and watersheds, sensitive species management and ACECs would restrict renewable energy in areas affecting the costs and feasibility of projects. These impacts would be limited based on location, habitat conditions, and management discretion in those areas. Large landscape scale fuelbreaks may afford additional protection to renewable energy facilities from wildfire.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Management strategies and permit requirements, including implementation of mitigation measures and permit stipulations applicable to renewable energy development to protect or reduce impacts on sensitive resources would increase costs. Use restrictions in designated priority wildlife habitat and priority watershed areas would affect the type or feasibility of operations proposed in those areas. Overall the incremental impacts on minerals would be moderate as fewer public lands would be available for renewable energy.

4.3.5 Transportation and Access***Summary***

The primary cause of effects on or changes to the transportation network is resource protection. Measures that are implemented to protect natural resources, such as wildlife, water, and soil, and to protect cultural resources could result in seasonal or permanent route restrictions or closures. Permitted activities on BLM-administered lands, such as those related to forestry and minerals, could expand the route network.

Methods of Analysis**Methods and Assumptions**

Potential impacts on transportation and travel from each alternative are based on interdisciplinary team knowledge of the resources and planning principles. Impacts were identified using best professional judgment and were assessed according to the following assumptions:

- The demand for recreational use would continue to increase over the life of the plan;
- Recreational visits would continue to increase;
- The incidence of resource damage and conflicts among recreationists involved in mechanized, motorized, and nonmotorized activities would increase with increasing use of public lands;
- Anticipated increases would focus on OHV use and on fishing, hiking, mountain biking, camping, motorboating, photographing, bird and wildlife observing, picnicking, and hunting;

- User-created trails could continue to be developed throughout the WD, even though such actions are illegal, and creators and users of nondesignated trails would be subject to enforcement actions; and
- Implementing the travel management plan would include increased public education, signing, enforcement, and resource monitoring in regard to travel management.

Transportation and Access: Effects from Air Quality Management

Effects Common to All Alternatives

Certain transportation-related construction and maintenance activities may be restricted if air quality impacts cannot be minimized by implementing best management practices or offset by mitigation measures.

Transportation and Access: Effects from Geology Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from geologic resource management.

Effects under Alternative A

Impacts on transportation and access management would not be likely to occur under Alternative A.

Effects under Alternative B

OHV use within unique geologic resource areas would be limited to roads and trails to protect geologic resources.

Effects under Alternative C

Effects would be greatest under Alternative C due to the closure of roads and trails to OHV use for protection of geologic resources.

Effects under Alternative D

Impacts on transportation and access are not likely to occur from managing unique geologic resources.

Transportation and Access: Effects from Soil Resources Management

Effects Common to All Alternatives

Wind erosion can have a major direct impact on public safety and transportation corridors because burned areas are near or surround transportation corridors, such as Interstate 80 and State Highways 95 and 140. Windblown soil has resulted in temporary closures of the Interstate and highways, which has affected interstate commerce. Soil management, such as erosion control techniques, would reduce the potential for wind erosion of soils from burned areas.

Effects under Alternative A

Effects would be the same as those described under Effects Common to All Alternatives.

Effects under Alternative B

Effects would be the same as those described under Effects Common to All Alternatives.

Effects under Alternative C

OHV travel and certain transportation-related construction and maintenance activities could be restricted if soil impacts could not be minimized by implementing best management practices or if they could not be offset by mitigation measures.

Effects under Alternative D

Effects would be the same as those described under Alternative C.

Transportation and Access: Effects from Water Resources Management

Effects Common to All Alternatives

Certain transportation-related construction and maintenance activities could be restricted if water quality standards could not be attained by implementing best management practices.

Transportation and Access: Effects from Vegetation—Forest /Woodland Products Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from vegetation-forest/woodland management.

Effects under Alternative A

Impacts on transportation and access management would not be likely to occur under Alternative A.

Effects under Alternative B

Direct effects from commercial harvesting of firewood, posts, and Christmas trees could include an increase in forestry-related traffic on routes within the WD. Long-term direct effects include an increase in the number of routes accessible on public lands through the establishment of new logging roads. This would indirectly affect opportunities for both motorized and nonmotorized users overall by increasing road density in the WD.

Effects under Alternative C

Certain transportation-related construction and maintenance activities could be restricted in designated old growth forests if impacts could not be minimized by implementing best management practices or if they could not be offset by mitigation measures.

Effects under Alternative D

Effects could be similar to those described under Alternative B but are expected to be less since commercial harvesting would be authorized only on a case-by case basis to achieve resource objectives. In addition, effects from designating old growth forests would be the same as those described under Alternative C.

Transportation and Access: Effects from Vegetation—Invasive and Noxious Species Management

Effects Common to All Alternatives

Impacts on transportation and access management would not be likely to occur under all alternatives.

Transportation and Access: Effects from Chemical and Biological Control

Effects Common to All Alternatives

Impacts on transportation and access management would not be likely to occur under all alternatives.

Transportation and Access: Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Impacts on transportation and access management would not be likely to occur under all alternatives.

Transportation and Access: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from vegetation-riparian and wetlands management.

Effects under Alternative A

Impacts on transportation and access management would not be likely to occur under Alternative A.

Effects under Alternative B

Measures implemented to protect riparian and wetland areas could directly affect transportation and travel management if routes are relocated or closed to protect sensitive resources. Effects would be short or long term depending on if the route were temporarily or permanently restricted. Closures for resource protection could result in an overall net decrease of available BLM-administered routes in the planning area.

Effects under Alternative C

Effects would be the same as those described under Alternative B.

Effects under Alternative D

Effects would be the same as those described under Alternative B.

Transportation and Access: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

Implementation of mitigation measures, permit stipulation, and use restrictions would affect public access and use on BLM roads. Management actions requiring implementation of mitigation measures may create more demands to remove or close roads or provide additional maintenance to protect wildlife habitat.

Use restrictions would reduce maintenance intervals of roads as the need for public use of the roads would be reduced.

Effects under Alternative A

Management of sensitive habitat areas with seasonal road closures would reduce road use and maintenance needs for system roads.

Effects under Alternative B

Measures implemented to protect aquatic and riparian habitat could directly affect transportation and travel management if routes were removed to preserve sensitive resources. Road removal for resource protection could result in an overall net decrease of available BLM-administered routes in the planning area. Management of priority 2 habitat areas would mitigate impacts and reduce uses in those areas. Road maintenance needs would be reduced.

Effects under Alternative C

Effects would be the same as those under Alternative B. Management of priority habitat 1 and habitat 2 areas would prohibit uses and associated demands for road maintenance. In addition, transportation construction and maintenance activities may be directly affected by seasonal prohibition of surface activities during migratory bird peak breeding season.

Effects under Alternative D

Management of designated priority habitat areas would prohibit uses and associated road maintenance demands would be reduced. Impacts would be similar to Alternative C.

Transportation and Access: Effects from Special Status Species Management

Effects Common to All Alternatives

Special status species management could directly affect transportation and travel management if routes are closed to protect sensitive resources. Effects would be short or long term depending on if

the route is temporarily or permanently restricted. Closures for resource protection could result in an overall net decrease of available BLM-administered routes in the planning area. Planning of future transportation routes could be directly affected by the presence of special status species and their habitat due to avoidance and buffer zone considerations.

Transportation and Access: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Impacts on transportation and access management would not be likely to occur under all alternatives.

Transportation and Access: Effects from Wildland Fire Management

Effects Common to All Alternatives

Route restrictions and closures could occur during wildland fire management activities, directly affecting transportation and travel management. Short-term effects could include an increase in fire management equipment traffic on BLM-administered routes, an increase in motorized vehicle traffic on routes that remain accessible until fire management activities stop, and an increase in motorized and nonmotorized conflicts on the remaining accessible routes.

Transportation and Access: Effects from Cultural Resources Management

Effects Common to All Alternatives

Under all alternatives, protective measures for cultural resources would affect transportation and travel management when restrictions are implemented to protect cultural values at specific sites. Restrictions on roads could directly affect visitors by limiting accessibility to some sites and could result in an overall reduction in available routes.

Transportation and Access: Effects from Tribal Consultation

Effects Common to All Alternatives

Impacts on transportation and access management would not be likely to occur under all alternatives.

Transportation and Access: Effects from Paleontological Resources Management

Effects Common to All Alternatives

Protective measures for paleontological resources could affect transportation and travel management if restrictions are implemented to protect identified paleontological resources at specific sites. Restrictions on roads could directly affect visitors by limiting accessibility to some sites and could result in an overall reduction in routes available to access public lands.

Transportation and Access: Effects from Visual Resources Management***Effects Common to All Alternatives***

Impacts on transportation and access management would not be likely to occur under all alternatives.

Transportation and Access: Effects from Cave and Karst Resources Management***Effects Common to All Alternatives***

Impacts on transportation and access management would not be likely to occur under all alternatives.

Transportation and Access: Effects from Livestock Grazing Management***Effects Common to All Alternatives***

Grazing management could directly affect transportation and travel management by adjusting current use and by altering routes. Short-term effects include increased use of the route network for livestock grazing management purposes, such as maintaining livestock developments. New routes established for livestock grazing management could increase overall route density on BLM-administered lands, thereby expanding the route network.

Transportation and Access: Effects from Minerals Management***Effects Common to All Alternatives***

Minerals management, including heavy equipment and truck traffic on the network of routes within the WD planning area, would directly affect transportation and travel management. Most effects would be relatively short term and would occur only during mineral development activities. New routes established for mineral development could also increase overall route density on BLM-administered lands, thereby expanding the route network. However, such a route would ordinarily be reclaimed at the completion of minerals activities, unless the county or BLM decides to accept it into their system of roads.

Transportation and Access: Effects from Recreation, Visitor Outreach, and Services Management***Effects Common to All Alternatives***

Development of the Transportation Plan through subsequent implementation-level plans could result in changes to route designations, which could affect routes available to motorized travel within the WD. Access could be increased or decreased in areas, depending on the designations made. New routes could also be established, which could expand areas available to motorized travel.

Effects under Alternative A

Alternative A would provide the greatest opportunity for OHV travel of all alternatives. Most of the WD (6,789,612 acres) would be open to OHV use, with minimal limited (423,786 acres) and closed (17,698) designated areas.

Effects under Alternative B

Increased visitation due to new recreational facilities would increase the use of roads and trails and would increase the demand for new travel routes. Managing new SRMAs could constrain or restrict public access in certain recreation management zones (RMZs) within the SRMAs or could enhance or encourage greater public access in other RMZs. Impacts would be local.

Under Alternative B, 1,460,200 acres would be open to OHV use, 5,743,198 acres would be limited to OHV use, and 17,698 acres would be closed to OHV use; this alternative would allow the most OHV travel of the RMP alternatives.

Effects under Alternative C

Effects from general recreation use and designation of new SRMAs would be the same as those described under Alternative B. OHV travel would be the most restricted under Alternative C, with 43,521 acres closed, 7,187,575 acres limited, and no acres open to OHV use.

Effects under Alternative D

Effects from general recreation use and designation of new SRMAs would be the same as those described under Alternative B. Under Alternative D, 288,105 acres would be open to OHV use, 6,925,414 acres would be limited, and 17,577 acres would be closed to OHV use.

Transportation and Access: Effects from Renewable Energy Management

Effects Common to All Alternatives

Renewable energy management, including heavy equipment and truck traffic on the network of routes within the WD planning area, would directly affect transportation and travel management. Most effects would be relatively short term and would occur only during renewable energy development activities. New routes established for renewable energy development could also increase overall route density on BLM-administered lands, thereby expanding the route network.

Transportation and Access: Effects from Transportation and Access Management

Effects Common to All Alternatives

Reducing erosion and sedimentation damage through maintenance and design criteria would facilitate the long-term use of access routes by minimizing deterioration of these routes and the impact on surrounding resources.

Obtaining easements from private land owners for current and new BLM system roads could enhance access to public lands within the WD.

Avoiding duplicate roads that have common destinations may result in heavier traffic on individual routes. In addition, access would be limited to some areas if a particular route were closed and no alternative route existed; the extent of impact would vary by the destinations served by the routes and by the duration of the closure.

Effects under Alternative A

Decommissioning roads that are adversely affecting the environment may limit access to some areas of the WD.

Effects under Alternative B

Constructing roads while avoiding creating fragmented resource tracts may affect the location of routes, limiting access in some areas.

Installing directional signs would enhance travel within the WD, particularly for recreational use, by indicating proper direction to destinations. In addition to minimizing the potential for visitors to become lost, signage would help direct traffic to main travel routes and would reduce the accidental use of roads that may not be suitable for all types of travel.

Effects under Alternative C

Decommissioning, removing, or rerouting roads or trails that are adversely affecting the environment may limit access to some areas of the WD. Constructing roads while avoiding creating fragmented resource tracts may affect the location of routes, limiting access in some areas. Effects from implementing a signage plan would be the same as those described under Alternative B.

Effects under Alternative D

Effects would be similar to those described under Alternative C.

Transportation and Access: Effects from Lands and Realty Management

Effects Common to All Alternatives

Land acquisitions may not increase the overall route network and expand both motorized and nonmotorized opportunities. On the other hand, disposal of public lands may close off public access as new private land owners may restrict public access.

Effects under Alternative A

Effects under Alternative A would be the same as those described under Effects Common to All Alternatives.

Effects under Alternative B

Designating 716,528 acres as avoidance areas to protect resources could affect future route planning in and through these areas, although the impact on route planning would be limited. This is because resource impacts from the granting of ROWs would not be completely prohibited but would require mitigation.

Effects under Alternative C

Designating 869,645 acres as avoidance areas for granting ROWs would have the same effects as those described under Alternative B. In addition, 1,279,481 acres would be designated as exclusion areas for granting ROWs in order to protect priority wildlife areas; this would limit route planning and could restrict access to some areas for certain uses.

Effects under Alternative D

Designating 1,325,967 acres as avoidance areas for granting ROWs would have the same effects as those described under Alternative B. Designating 699,929 acres as exclusion areas for granting ROWs would have the same effects as those described under Alternative C.

Transportation and Access: Effects from ACEC/RNA Management

Effects Common to All Alternatives

ACEC management would close areas containing gravel sources necessary to maintain roads.

Effects under Alternative A

Impacts on transportation and access management would not be likely to occur under Alternative A.

Effects under Alternative B

Impacts on transportation and access management are not expected as only one small ACEC is proposed under this alternative.

Effects under Alternative C

Management actions within ACECs would affect road maintenance by limiting the availability of gravel to maintain roads. Access and travel would become more difficult. Maintenance of roads would also become more costly.

Effects under Alternative D

Effects would be the same as those described under Alternative C.

Transportation and Access: Effects from Backcountry Byways Management

Effects Common to All Alternatives

Developing new BCBs could enhance travel and could add new access routes within the WD.

Transportation and Access: Effects from National Historic Trails Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from National Historic Trails management.

Effects under Alternative A

Impacts on transportation and access management would not be likely to occur under Alternative A.

Effects under Alternative B

Impacts on transportation and access management would not be likely to occur under Alternative B.

Effects under Alternative C

Class I segments of National Historic Trails would be closed to OHV use. Class II, III, IV, and V sections would be designated as limited for OHV use.

Effects under Alternative D

Effects would be the same as those described under Alternative C.

Transportation and Access: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from WSR management..

Effects under Alternative A

Under Alternative A, eligible river corridors would be given protection either through continued interim protective management or the development of Comprehensive River Management Plans. In both cases, construction of new roads would be prohibited within eligible corridors classified as wild and construction of new roads may occur within eligible corridors classified as scenic including occasional bridges as long as the new roads wouldn't cause the eligible river segment to be classified at a lower status.

Effects under Alternative B

There would be no impacts on transportation or access from WSR management under Alternative B.

Effects under Alternative C

Effects would be the same as those described under Alternative A.

Effects under Alternative D

Under Alternative D, there likely would be no impacts on transportation or access from WSR management as long as WSA, priority habitat, and priority watershed management, as outlined in the remainder of the RMP, are implemented. In the case that these management actions are not implemented or are removed after implementation, interim protective management measures would be implemented within the 13,583 acres of eligible WSR corridors, which would have effects identical to those described under Alternatives A and C.

Transportation and Access: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

If Congress releases 13 WSAs, and the WSAs are managed for uses other than wilderness, new access routes could be needed within these areas.

Effects under Alternative A

Effects under Alternative A would be the same as those described under Effects Common to All Alternatives.

Effects under Alternative B

Managing 240,233 acres to protect wilderness characteristics could limit route planning and could restrict access to some areas.

Effects under Alternative C

Effects would be the same as those described under Alternative B.

Effects under Alternative D

Effects would be the same as those described under Alternative B.

Transportation and Access: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Developing new wildlife viewing sites could enhance travel and could add new access routes within the WD.

Transportation and Access: Effects from Public Health and Safety Management

Effects Common to All Alternatives

Impacts on transportation and access management would not be likely to occur under all alternatives.

Transportation and Access: Effects from Sustainable Development Management

Effects Common to All Alternatives

Issuance of ROWs to support the reuse of public lands could add new access routes within the WD.

Transportation and Access: Cumulative Effects

Past and Present Actions

Past and present impacts resulting from livestock grazing has been increased costs and need for fencing to protect motorists from collisions with livestock along highways. Minerals, lands and

realty, and renewable energy projects have increased the need for additional maintenance of system roads, especially during times of construction of facilities. Recreation use has also increased the maintenance demand on roads for those segments located near recreation areas and during seasonal increases in recreational use such as hunting season. Few impacts on transportation or access have been generated based on special status species management. Short term impacts on roads have occurred creating additional maintenance needs to repair roads after WHB gathers and for roads used to access wildfires during suppression and rehabilitation efforts.

Reasonably Foreseeable Actions

Impacts would be similar to the past and present actions for livestock grazing, recreation, WHB and wildland fire management. Fencing may be necessary along highways to protect motorists from wildlife.

Designated priority wildlife habitat and watershed areas would restrict certain uses in those areas reducing BLM maintenance intervals on roads in those areas. Special status species management would increase operational costs in order to mitigate potential impacts on sensitive species habitat due to relocating or decommissioning roads causing resource damage.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Incremental cumulative impacts would be low and similar for all alternatives. Management strategies and permit requirements, including implementation of mitigation measures to protect or reduce impacts on resources would increase costs and maintenance demands.

4.3.6 Lands and Realty

Summary

In general, Effects Common to All Alternatives involve actions that continue to both allow and restrict certain land uses, depending on local resource conditions and opportunities for resource use and consumption. Specific actions that allow and restrict certain land uses are associated with the management of the following resources: air quality, forest and woodland products, weeds, rangeland, riparian and wetland resources, fish and wildlife, special status species, wildland fire, cultural resources, paleontological resources, visual resources, minerals, renewable energy, transportation and access, lands and realty, national historic trails, and WSAs. Reasonably foreseeable developments also influence actions that allow and restrict certain land uses.

Alternative A would continue to rely on dated Management Framework Plans and the 1999 Lands Amendment to Paradise-Denio and Sonoma-Gerlach Management Framework Plan to manage land use and land designations. These plans are silent on current issues (such as the scattered land ownership pattern, renewable energy development, and ROWs) affecting the management of BLM-administered land, diminishing the ability of the BLM to effectively manage the land.

In absolute terms, Alternatives C and D would have similar impacts on land use and land designations. Alternative B would provide slightly fewer opportunities for changing land uses and designations.

In relative terms, Alternatives B, C, and D differ in their degree of impact on land use and land designations. The differences in degree of impact on land use and land designations are detailed below under each alternative. A noteworthy aspect of resource management actions that affect land use and land designations has to do with compatibility. For example, the allowance of one type of use can involve the restriction of a different type of use. Conversely, the restriction of one type of use can involve the allowance of a different type of use. Consequently, changes in land use typically involve both an increase and a decrease in the types of activities that can occur due to compatibility issues.

Methods of Analysis

Methods and Assumptions

Potential impacts on lands and realty from each alternative are based on interdisciplinary team knowledge of the resources and the planning area and information gathered from the public during the planning process. Effects are quantified where possible. In absence of quantitative data, best professional judgment was used. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were identified using best professional judgment and were assessed according to the following assumptions:

- Retaining larger blocks of public land is advantageous to the BLM's management of all resources and programs since there are increased opportunities to develop long-term habitat and species management plans, watershed management plans, and public recreation opportunities, to manage forest and vegetable products, to administer livestock grazing, and to protect cultural resources;
- Consolidating public lands and eliminating scattered parcels of public land that lack access and are difficult to manage is beneficial to the BLM and the public;
- Access to public lands, for both the public and the BLM, and availability of public lands to meet public demands is a high priority of the Lands and Realty program;
- Identifying lands for disposal does not ensure that these lands would be sold or otherwise disposed;
- Before any disposals occur, lands would be examined for the presence of high-value resources. Lands that contain high surface values would not be disposed, or the disposal would provide for those values to be preserved;
- Acquisition, including direct purchase, conservation easement, donation, or exchange, would only be considered when there is a willing seller and the goals and objectives of the land use plan would be furthered;
- Mineral leasing would not occur in exclusion areas. It is also assumed that mineral leasing would not occur on withdrawn lands, if the reason for the mineral withdrawal is not compatible with leasing and the subsequent RFDs; and
- The effects of developing utility and transportation systems would be mitigated individually. Generally, this would be accomplished by consolidating new developments along existing routes or by innovative construction techniques that disturb less land and improve reclamation success.

Lands and Realty: Effects from Air Quality Management***Effects Common to All Alternatives***

Activities on BLM-administered land would be required to comply with air quality standards. This would influence, for example, the timing, location, and mitigation associated with certain land uses, such as ROWs. There would be no new impacts on land use and land designations.

Effects under Alternative A

There would be no impacts, because there are no actions that are likely to affect land use and land designations.

Effects under Alternative B

The impacts would be the same as those under Alternative A.

Effects under Alternative C

The impacts would be the same as those under Alternative A.

Effects under Alternative D

The impacts would be the same as those under Alternative A.

Lands and Realty: Effects from Geology Management***Effects Common to All Alternatives***

There would be no effects common to all alternatives from geologic resource management.

Effects under Alternative A

There would continue to be no actions for protecting unique geologic resources. There would be no new impacts on land use and land designations, and ongoing impacts would continue. For example, land uses such as ROWs may be authorized near unique geologic resources.

Effects under Alternative B

Proposed activities that may impact unique geologic features would be authorized with the minimum mitigation measures sufficient to protect the values at risk. Impacts would be mitigated through avoidance, reclamation, and other applicable use restrictions. This would alter certain land uses near unique geologic features in order to ensure compatibility of land uses, resulting in a localized impact.

Effects under Alternative C

Proposed nondiscretionary activities that may affect geologic features would be authorized with appropriate mitigation measures to protect the values at risk. Discretionary activities that may affect geologic features would not be allowed. This would alter certain land uses, when compared to Alternatives B and D, near unique geologic features to ensure compatibility of land uses, resulting in a localized impact.

Effects under Alternative D

Proposed activities that may impact geologic features would be authorized with mitigation measures appropriate to protect the values at risk. This would alter certain land uses near unique geologic features to ensure compatibility of land uses, resulting in a localized impact.

Lands and Realty: Effects from Soil Resources Management

Effects Common to All Alternatives

Rehabilitation and saving suitable material as growth medium would enhance reclamation success of ROW facilities.

Effects under Alternative A

An objective of the BLM is to continue to reduce soil erosion. There would be no new impacts on land use and land designations, and ongoing impacts would continue.

Effects under Alternative B

The impacts would be the same as those under Alternative A.

Effects under Alternative C

An objective of the BLM would be to maintain, protect, and improve soil processes appropriate to soil types, climate, and land form, as indicated by surface litter, biological soil crusts, hydrologic cycles, nutrient cycles, energy flows, and plant communities. Because of the soil factors specified for consideration, this would have a greater influence, for example, on the timing, location, and mitigation associated with certain land uses such as ROWs, when compared to Alternative A throughout the WD.

Effects under Alternative D

The impacts would be the same as those under Alternative C.

Lands and Realty: Effects from Water Resources Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from water resources management.

Effects under Alternative A

There would continue to be no actions relating to avoidance and exclusion zones in wellhead protection zones. There would be no new impacts on land use and land designations, and ongoing impacts would continue. For example, land uses, such as for ROWs, may be authorized in wellhead protection zones.

Effects under Alternative B

The BLM would manage wellhead protection zones as avoidance zones for discretionary actions that are not compatible. This would alter certain land uses such as for ROWs in wellhead protection zones to ensure compatibility of land uses throughout the WD.

Effects under Alternative C

The BLM would manage wellhead protection as exclusion zones for discretionary actions. This would alter certain land uses, such as for ROWs in wellhead protection zones, throughout the WD, to ensure compatibility of land uses, more so than under Alternative B.

Effects under Alternative D

The impacts would be the same as those under Alternative C. Municipal watersheds would be managed as avoidance areas allowing the authorization of ROWs projects with required special stipulations on a case-by-case basis. Allowing importation and exportation of water resources that do not exceed the perennial yield would encourage ROW development projects within the WD. No surface occupancy and no surface disturbance would exclude ROWs within priority watersheds containing threatened and endangered species habitats.

Lands and Realty: Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

There would be no known impacts that would affect realty actions from forest management. Implementing mitigation measures and SOPs to maintain forest health would be required on a case-by-case basis to realty actions.

Lands and Realty: Effects from Vegetation—Invasive and Noxious Species Management

Effects Common to All Alternatives

Operator actions to control the establishment and spread of weeds would be required on ROW approvals on a case-by-case basis.

Lands and Realty: Effects from Chemical and Biological Control

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect land use and land designations.

Lands and Realty: Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Permit terms and conditions to minimize adverse impacts on rangeland vegetation would restrict ROWs and how they are managed. Ongoing impacts would vary depending on the terms and conditions required. There would be no new impacts.

Rangeland treatments could restrict access to public lands in the short term during treatment implementation. However, using and maintaining roads during rangeland treatments could improve access to public lands in the long term. There would be no new impacts.

The required two year notification to grazing lessees regarding land disposal actions could delay disposal actions related to land tenure adjustments unless the lessees sign a waiver.

Lands and Realty: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Protection of riparian and wetland areas could limit access to public lands in specific areas. Ongoing impacts would be localized and long term and would vary depending on the level of protection provided. There would be no new impacts.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect land use and land designations.

Effects under Alternative B

The impacts would be the same as those under Alternative A.

Effects under Alternative C

The impacts would be the same as those under Alternative A.

Effects under Alternative D

The impacts would be the same as those under Alternative A.

Lands and Realty: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

Use restrictions to maintain and improve wildlife habitat would impact realty actions in these areas in the long term. There would be no new impacts.

Effects under Alternative A

Mitigation measures to reduce impacts from ROWs would occur on a case-by-case basis.

Effects under Alternative B

Land treatments to improve wildlife habitat could restrict access to public lands in the short term during treatment implementation. However, using and maintaining roads during habitat treatments could improve access to public lands in the long term.

Removing, altering, and maintaining access routes that degrade aquatic resources could impact public land access in certain areas throughout the WD in the long term. These impacts would likely be localized.

Compared to Alternative A, the BLM would have more Priority 2 habitat and the same amount of Priority 1 habitat. Priority habitat areas would limit the types of actions and locations that could occur in order to protect resource values.

Effects under Alternative C

Land treatments to improve wildlife habitat would have impacts similar to those described under Alternative B.

Removing access routes that degrade aquatic resources could cause the greatest impact on public land access in certain areas throughout the WD in the long term. These impacts would likely be localized.

Use restrictions near shorebird habitats would provide additional impacts on lands and realty actions in these areas in the long term.

Under Alternative C, 1,279,481 acres would be identified as Priority 1 wildlife habitat which would exclude ROWs. Managing 869,645 acres as Priority 2 wildlife habitat would require the application of special stipulations.

Effects under Alternative D

Under Alternative D, BLM would designate five priority wildlife habitat areas that correspond to five PMU areas: North Massacre (adjacent to Black Rock PMU), Black Rock, Pine Forest, Lone Willow and Santa Rosa. These areas would be managed as exclusion areas for ROWs. ROWs in these areas would not be issued, except under specified circumstances (see FW 1.1). The remaining PMUs (Eden Valley; Sonoma; East Range; Humboldt; Trinity 1 and 2; Majuba 1, 2, 3, and 4; Sahwave 1 and 2; Nightingale; Limbo; Massacre (south); Slumbering Hills; and Jackson) would be managed as avoidance areas for ROWs. ROWs in these areas could be granted but would require special stipulations to mitigate impacts on resources of concern. Restricting ROWs in priority wildlife habitat areas while improving habitat, and implementation of permit stipulations, mitigation measures, BMPs and SOPs to protect important wildlife habitat area, could increase costs associated with re-routing ROWs, leases, permits outside of priority habitats. Management may allow surface disturbance on a case-by-case basis.

Removing, altering and maintaining access routes that degrade aquatic resources could impact public land access in certain areas throughout the WD. These impacts would likely be localized.

Lands and Realty: Effects from Special Status Species Management

Effects Common to All Alternatives

The following actions would continue to occur:

- Protect sensitive species habitat by implementing mitigation measures to reduce adverse impacts. Mitigation measures include, but are not limited to, avoidance, no surface occupancy, buffer zones, seasonal restrictions, off-site mitigation, use restrictions, rehabilitation, or other protective measures;

- Protect documented bald eagle, golden eagle, prairie falcon, and peregrine falcon cliff-nesting sites. Mitigate adverse impacts through use restrictions, avoidance, providing alternative viable nest sites, or employing other mitigation measures following the guidelines of the Bald and Golden Eagle Protection Act or applicable updates;
- Avoid tree control (cutting or removal by any means) within a 1-mile radius of documented active ferruginous hawk nests. Mitigate adverse impacts through use restrictions, avoidance, providing alternative viable nest sites (preferably an identifiable alternative nest tree), or employing other mitigation measures;
- Protect documented northern goshawk nest areas and sites. Mitigate adverse impacts through use restrictions, avoidance, or providing alternative nest sites (preferably an alternate nest already built) within or adjacent to the nesting area or employing other mitigation measures; and
- Continue to pursue a mineral withdrawal for Osgood Mountains ACEC.

These actions are intended to continue to protect sensitive flora and fauna and their habitat from disturbance. People who use BLM-administered lands for recreation activities such as photography and bird watching would have a greater chance of seeing these species with the implementation of these actions. However, these actions could restrict other types of land uses on BLM-administered lands, such as by designating avoidance areas. There would be no new impacts.

Effects under Alternative A

Alternative A would institute the fewest use restrictions (e.g., surface occupancy or disturbance, high-profile structure construction) in and near special status species occurrences and habitat (for example a PMU boundary). Ongoing impacts would be long term, would vary on a case-by-case basis, and are likely to be localized. There would be no new impacts.

Effects under Alternative B

Few realty use restrictions would occur under Alternative B.

Effects under Alternative C

There would be no surface disturbance or surface occupancy with PMU areas and realty actions would not be permitted. ROWs may become more expensive and surface disturbance may increase outside PMUs in order to avoid areas. Linear ROWs would be longer in order to avoid PMUs.

Effects under Alternative D

Use restrictions in and near special status species occurrences and habitats would provide more protection of these species than under Alternatives A or B, but not as much as under Alternative C.

Lands and Realty: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

No land designations have been identified therefore, no impacts would be expected. ROW development and construction activities could be delayed by timing restrictions due to the foaling season.

Lands and Realty: Effects from Wildland Fire Management***Effects Common to All Alternatives***

Implementing a response to wildfires, based on social, legal, and ecological consequences of the fire, would require maintaining access routes throughout the WD. As a result, this would increase suppression priorities and improve access to public lands in the long term. There would be no new impacts.

Land treatments related to wildland fire management could restrict access to public lands in the short term during treatment implementation. However, using and maintaining roads during treatments could improve access to public lands in the long term. There would be no new impacts. Construction of fuelbreaks would help protect ROW infrastructure from wildfire.

Lands and Realty: Effects from Cultural Resources Management***Effects Common to All Alternatives***

The BLM would continue to develop stipulations, use restrictions, and mitigation measures to avoid or reduce adverse impacts on cultural resources. There would be no new impacts on land use and land designations.

Direct and indirect adverse impacts on eligible, unevaluated, or high-potential trail segments and associated sites would be mitigated by avoidance, project redesign, data collection, interpretation, public education, or other means in consultation with the National Park Service, Nevada SHPO, and interested public. There would be no new impact on land use and land designations.

Effects under Alternative A

The BLM would mitigate potential adverse impacts on historic landscapes associated with eligible, unevaluated, or high-potential trail segments by adhering to a VRM Class II objective within six miles of the trail centerline or to the visual horizon within the six-mile zone. There would be no new impacts on land use and land designations.

Effects under Alternative B

The BLM would protect historic landscapes associated with the CNHT by adhering to a VRM Class III objective within six miles of the centerline or to the visual horizon within the six-mile zone, except along the I-80 corridor and within the utility corridors, which would be managed to VRM Class IV. Compared to Alternative A, there would be more opportunities for new types of land uses near the CNHT trail because VRM class designation objectives would allow for more changes to the aesthetics associated with the trail.

Effects under Alternative C

The BLM would protect historic landscapes associated with the CNHT by adhering to a VRM Class II objective within six miles of the centerline, or to the visual horizon within the six-mile zone. The impacts would be the same as under Alternative A.

Effects under Alternative D

The BLM would protect historic landscapes associated with the CNHT by adhering to a VRM Class II objective within six miles of the trail centerline or to the visual horizon within the six-mile zone, except along the I-80 corridor and within the utility corridor at the southern edge of the Black Rock Desert. The portion of the trail viewshed that falls within the Black Rock Desert utility corridor would be managed to VRM Class III. Within the I-80 corridor, the trail viewshed would be managed to VRM Class III within six miles of the trail centerline or to the visual horizon within the six-mile zone, except for the power line corridor and sensitive areas of the trail viewshed. Sensitive areas would be managed to VRM Class II one mile on either side of the centerline of the trail. The I-80 trail viewshed in this power line corridor would be managed to VRM Class IV. Compared to Alternative A, there would be more opportunities for new types of land uses near the CNHT trail because VRM class designation objectives would allow for more changes to the aesthetics associated with the trail. However, fewer opportunities would exist under Alternative D when compared to Alternatives B and C.

Lands and Realty: Effects from Tribal Consultation

Effects Common to All Alternatives

The location of ROWs, and whether specific parcels are available for disposal under land tenure adjustments, may be affected through Tribal Consultation.

Lands and Realty: Effects from Paleontological Resources Management

Effects Common to All Alternatives

The BLM would require a permit for the removal of paleontological resources for the purposes of scientific research, inventory, planning, and monitoring or to mitigate adverse impacts from authorized or unauthorized uses. It also would issue permits for the noncommercial collection of vertebrate fossils, including their trace fossils such as trackways and coprolites. Although permits for the noncommercial collection of invertebrate, plants, fossils, and petrified wood are not normally required within limits defined by regulation, locations containing noteworthy occurrences of such fossils may be closed to collection except under permit. These actions would continue to allow the collection of paleontological resources through a regulated process, enabling the BLM to monitor collection activities and the status of paleontological resources. There would be no new impacts.

Effects under Alternative A

The BLM would protect scientific values (paleontological-vertebrate fossils found on public lands). There would be no new impact on land use and land designations.

Effects under Alternative B

No discretionary activities would be authorized on public lands if they would knowingly disturb or alter, injure, or destroy scientifically important paleontological resources, unless impacts can be mitigated. This would influence, for example, the location of certain land uses, such as land tenure adjustments.

Effects under Alternative C

The impacts would be the same as those under Alternative B.

Effects under Alternative D

The impacts would be the same as those under Alternative B.

Lands and Realty: Effects from Visual Resources Management

Effects Common to All Alternatives

The BLM would manage CNHT according to BLM policy and guidance by protecting scenic landscapes and historic settings. There would be no new impacts.

Effects under Alternative A

The BLM would continue to manage visual resources associated with ACECs and BCBs subject to VRM classification established in the Paradise-Denio and Sonoma-Gerlach Management Framework Plans. The BLM would continue to not identify specific VRM class designations for priority watersheds. There would be no new impacts on land use and land designations.

Effects under Alternative B

The BLM would manage the Osgood Mountains ACEC and BCBs and associated landscapes as VRM Class II and would manage priority watersheds as VRM Class II. This could limit the location of land uses proposed in these areas in order to comply with VRM class designation objectives.

Effects under Alternative C

The BLM would manage ACECs and associated landscapes as VRM Class II. Backcountry byways and associated landscapes and priority watersheds would be managed according to VRM Class II objectives. This could limit the location and/or apply mitigation measures to land uses that are proposed in these areas in order to comply with VRM class designation objectives.

Effects under Alternative D

The BLM would manage the Osgood Mountains ACEC and associated landscapes as VRM Class III. The Pine Forest, Raised Bog, and Stillwater ACECs and associated landscapes would be managed as VRM Class II. Backcountry byways and associated landscapes would be managed according to VRM Class III objectives. Priority watersheds and associated landscapes would be managed according to VRM Class II objectives. This could limit the location and/or apply mitigation measures to land uses that are proposed in these areas in order to comply with VRM class designation objectives.

Lands and Realty: Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from cave and karst resource management.

Effects under Alternative A

The BLM would continue to not identify specific actions designed to protect cave and karst resources. There would be no new impacts on land use and land designations, and ongoing impacts would continue. For example, land uses such as for recreation may be authorized near cave and karst resources.

Effects under Alternative B

The BLM would implement appropriate mitigation measures such as seasonal closures, avoidance, fencing, bat gates, and signing to protect cave and karst resources and wildlife habitat. This would limit certain land uses near cave and karst resources.

Effects under Alternative C

The BLM would not allow surface-disturbing activities within 500 feet of natural caves or karsts. This would limit certain land uses near unique geologic features.

Effects under Alternative D

The impacts would be the same as those under Alternative B.

Lands and Realty: Effects from Livestock Grazing Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from livestock grazing management.

Effects under Alternative A

The BLM would continue to designate 8,232,727 acres as available to livestock grazing and would designate 296,008 acres as closed to livestock grazing. Incompatible land uses would continue to be prohibited. There would be no new impacts.

Effects under Alternative B

The impacts would be the same as those described under Alternative A.

Effects under Alternative C

Option 1

The BLM would designate 8,038,084 acres as available to livestock grazing and would designate 297,999 acres as closed to livestock grazing. These designations are similar to Alternative A. Incompatible land uses would continue to be prohibited. There would be no new impacts.

Option 2

No grazing would be allowed. This would increase the types of activities that could occur on lands where livestock grazing once occurred. Activities that are incompatible with livestock grazing could potentially occur on lands where livestock grazing once occurred.

Effects under Alternative D

The BLM would designate 8,016,754 acres as available to livestock grazing and would designate 319,328 acres as closed to livestock grazing, thereby limiting the types of compatible land uses that could occur. This alternative has the least number of acres open to livestock grazing and the most number of acres closed to livestock grazing. Because of the increase in the number of acres closed to livestock grazing, more land uses that are incompatible with livestock grazing could occur under this alternative. Incompatible land uses would continue to be prohibited.

Lands and Realty: Effects from Minerals Management

Effects Common to All Alternatives

The BLM would ensure occupancy does not hinder previously existing access to public lands. The BLM would continue to ensure that previously existing routes would continue to be available for accessing public lands during the development of mineral resources. There would be no new impacts with respect to public land access.

Appendix I contains RFDs, which describe potential scenarios for the development of mineral and energy resources on BLM-administered land. The development scenarios vary with the type of resource that is being developed. Nevertheless, all RFDs involve reducing the number of compatible land uses. For example, recreational horseback riding could not occur in the same location as an open-pit mine, and livestock grazing could not occur in the same location as a solar development. The development of mineral and energy resources would be compatible with the BLM's mission of managing land for multiple uses. It also would prohibit the use of BLM-administered land for certain uses at the same time. There would be no new impacts.

RFDs

Future actions based on reasonable development could result in indirect impacts. Future exploration and development could involve new structures, roads, and operations. These new structures, roads, and operations could be in areas where people live and work, where frequent recreation occurs, or where minimal nearby development exists. Incompatible actions would not be allowed. For example, some reasonable foreseeable development actions would be incompatible with some forms of recreation or actions intended to protect sensitive species. Because incompatible actions would not be allowed, certain types of land uses would be limited.

Effects under Alternative A

Saleable

The BLM would continue to maintain 418,938 acres as closed to mineral material disposal. This would continue to prevent mineral material actions on five percent of the land. Conversely, it would continue to allow actions that are incompatible with mineral material actions to occur on this land. There would be no new impacts.

Fluid

The BLM would continue to maintain the following conditions:

- Open to leasing but subject to a No Surface Occupancy—29,582 acres of BLM-administered land (excluding the NCAs) (0.4 percent); and
- Closed to leasing—446,887 acres of BLM-administered land (excluding the NCAs) (6 percent).

There would be no new impacts.

Solid

The BLM would continue to maintain the following conditions:

Open 6,776,198

- Open to leasing—6,776,198 (94 percent);
- Open to leasing but subject to a No Surface Occupancy: National Register eligible sites;
- Closed to leasing—416,652 acres of BLM-administered land (excluding the NCAs) (6 percent).

There would be no new impacts.

Locatable

The BLM would continue to withdraw lands from locatable mineral development on a case-by-case basis. Existing mineral withdrawals include Pine Forest, George Lund Petrified Forest, and Lovelock Cave. Lands identified for potential mineral withdrawal would continue to include Porter Springs and Water Canyon. There would be no new impacts.

Effects under Alternative B

Saleable

The impacts would be the same as those under Alternative A.

Fluid

The BLM would have the following conditions:

- Open to leasing but subject to a No Surface Occupancy—221,644 acres of BLM-administered land (excluding the NCAs) (3 percent) and
- Closed to leasing—1,132,594 acres of BLM-administered land (excluding the NCAs) (16 percent).

Compared to Alternative A, this would prevent fluid mineral actions on more land. Conversely, it would allow actions that are incompatible with fluid mineral actions to occur on this land.

Solid

The BLM would have the following conditions:

- Open to leasing but subject to a No Surface Occupancy—221,644 acres of BLM-administered land (excluding the NCAs) (3 percent) and
- Closed to leasing—1,124,266 acres of BLM-administered land (excluding the NCAs) (13 percent).

Compared to Alternative A, this would prevent solid mineral actions on more land. Conversely, it would allow actions that are incompatible with solid mineral actions to occur on this land.

Locatable

The impacts would be the same as those under Alternative A.

Effects under Alternative C

Saleable

The BLM would establish 837,049 acres as closed to mineral material disposal. This would prevent mineral material actions on 12 percent of the land, which is more than under all the alternatives. Conversely, it would allow more actions that are incompatible with mineral material actions to occur on this land.

Fluid

The BLM would have the following conditions:

- Closed to leasing—4,455,028 acres of BLM-administered land (excluding the NCAs) (62 percent).

This would prevent fluid mineral actions on more land than the other alternatives. Conversely, it would allow actions that are incompatible with fluid mineral actions to occur on this land.

Solid

The BLM would have the following conditions:

- Closed to leasing—4,455,645 acres of BLM-administered land (excluding the NCAs) (62 percent).

This would prevent solid mineral actions on more land than the other alternatives. Conversely, it would allow actions that are incompatible with solid mineral actions to occur on this land.

Locatable

The BLM would continue to withdraw lands from locatable mineral development on a case-by-case basis. Existing mineral withdrawals include Pine Forest, George Lund Petrified Forest, and Lovelock Cave. Lands identified for potential mineral withdrawal would include Porter Springs, Water Canyon, Osgood Mountains ACEC, Pine Forest ACEC, Raised Bog ACEC, Stillwater ACEC, a larger Lovelock Cave withdrawal (Action C-MR 9.2), and a larger George Lund Petrified Forest mineral withdrawal (Action C-MR 9.2). Also, lands acquired (by any process) would be withdrawn from mineral entry. Compared to Alternative A, this would prevent locatable mineral actions on

more land. Conversely, it would allow actions that are incompatible with locatable mineral actions to occur on this land.

Effects under Alternative D

Saleable

The BLM would establish 694,991 acres as closed to mineral material disposal. This would prevent mineral material actions on 10 percent of the land, which is more than under Alternative A. Conversely, it would allow more actions that are incompatible with mineral material actions to occur on this land. Less mineral disposal would result in a decreased ability to maintain or construct roads in this area.

Fluid

The BLM would have the following conditions:

- Open to leasing but subject to a No Surface Occupancy—205,485 acres of BLM-administered land (excluding the NCAs) (3 percent) and
- Closed to leasing—1,740,928 acres of BLM-administered land (excluding the NCAs) (24 percent).

Compared to Alternative A, this would prevent fluid mineral actions on more land. Conversely, it would allow actions that are incompatible with fluid mineral actions to occur on this land.

Solid

The BLM would have the following conditions:

- Open to leasing but subject to a No Surface Occupancy—205,485 acres of BLM-administered land (excluding the NCAs) (3 percent) and
- Closed to leasing—1,740,930 acres of BLM-administered land (excluding the NCAs) (24 percent).

Compared to Alternative A, this would prevent solid mineral actions on more land. Conversely, it would allow actions that are incompatible with solid mineral actions to occur on this land.

Locatable

The BLM would continue to withdraw lands from locatable mineral development on a case-by-case basis. Existing mineral withdrawals include Pine Forest, George Lund Petrified Forest, and Lovelock Cave. Lands identified for potential mineral withdrawal would include Porter Springs, Water Canyon Osgood Mountains ACEC, a larger Lovelock Cave withdrawal (Action D-MR 9.2), and a larger George Lund Petrified Forest mineral withdrawal (Action D-MR 9.2). Compared to Alternative A, this would prevent locatable mineral actions on more land. Conversely, it would allow actions that are incompatible with locatable mineral actions to occur on this land.

Lands and Realty: Effects from Recreation, Visitor Outreach, and Services Management***Effects Common to All Alternatives***

There would be no impacts because there are no actions that are likely to affect land use and land designations.

Lands and Realty: Effects from Renewable Energy Management***Effects Common to All Alternatives***

Renewable energy development would increase the number of ROWs and increase associated workload to process ROWs. Higher potential for conflicts between ROW holders could occur. ROWs issued for renewable energy development would promote land uses associated with renewable energy while potentially detracting from other land uses.

Effects under Alternative A

Alternative A would promote renewable energy development and would have the largest impacts on lands and realty based on more public lands being made available for ROW issuance associated with renewable energy development. This alternative would have the highest potential for conflicts between ROW holders as more ROWs would be granted. Fewer renewable energy restrictions would increase the feasibility of renewable energy projects and the potential for more ROWs to be issued.

Effects under Alternative B

Alternative B includes avoidance areas associated with both renewable energy development and ROWs. Implementation of special stipulations and mitigation measures would be limited in avoidance areas. Impacts from renewable energy development would include fewer ROW proposals in avoidance areas due to increased costs to mitigate impacts.

Effects under Alternative C

Under Alternative C, land use restrictions for avoidance and exclusion areas would prohibit issuance of ROWs within exclusion areas. Special stipulations and mitigation measures would be implemented in avoidance areas. Fewer lands would be available for issuance of ROWs and increased costs associated with developing mitigation measures would affect the feasibility of projects and ROW demands.

Effects under Alternative D

Under Alternative D, issuance of ROW for renewable energy projects would be subject to avoidance and exclusion areas, 1,783,000 acres would be identified as avoidance areas, more than under Alternatives B and C. Management of 1,201,000 acres would be identified as exclusion areas, less than Alternative C, where no ROWS would be allowed. Fewer lands would be available for renewable energy projects and associated ROWs under this alternative when compared to Alternatives A and B.

Lands and Realty: Effects from Transportation and Access Management***Effects Common to All Alternatives***

An objective of the BLM would be to continue to provide access to public lands recreational sites through active road maintenance and legal easements. Changes in OHV use designations would require site-specific implementation plans and route designations before changes in motorized travel. There would be no new impacts on land use and land designations.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect land use and land designations.

Effects under Alternative B

The impacts would be the same as those under Alternative A.

Effects under Alternative C

The impacts would be the same as those under Alternative A.

Effects under Alternative D

The impacts would be the same as those under Alternative A.

Lands and Realty: Effects from Lands and Realty Management***Effects Common to All Alternatives***

Applying stipulations to ROW grants and requiring compliance with BMPs and SOPS would reduce impacts on resources. Reserving ROWs to the US in land disposal actions would help ensure public access resulting from land tenure adjustments.

ROWs and Communication Sites

The WD would continue to grant ROWs over, upon, under, or through public lands to meet public needs while protecting resources. The BLM would provide for communications sites on public land by co-locating on existing sites when frequencies are compatible. This would continue to minimize the development of various communication sites while reducing the number of authorizations. There would be no new impacts.

Trespass

The BLM would pursue the resolution of existing unauthorized use cases by bringing them into compliance and would coordinate with state and local government officials during the process. The BLM would check the boundaries of all expanding subdivisions and isolated dwellings for encroachment and would take action as necessary. This would continue to reduce trespassing, thereby protecting BLM-administered land for use by the general public. There would be no new impacts.

There are some documented and unresolved trespass cases in the WD area. The BLM also expects that there are trespass cases that have not been discovered or documented. Because of workload priorities and limited staffing, some of these ongoing trespass issues are expected to remain unresolved.

Access

The BLM would review all proposed disposals of public lands, retain any needed legal access to the remaining public lands, and ensure public access is obtained through perpetual ROWs and development of systems roads with all land acquisitions, transfers, and sales. The BLM would continue to maintain access to public land. There would be no new impacts involving public access.

Corridors

ROWs would be placed within utility corridors as appropriate to reduce new surface disturbance to wildlife habitat and reduce habitat fragmentation.

Land Tenure Adjustments

The WD would continue to pursue acquisitions of environmentally sensitive lands, provide public access for recreation opportunities, and acquire areas with cultural or historic values. The WD would dispose of public lands in accordance with FLPMA. Land tenure adjustments would consolidate land ownership patterns and improve BLM management of public lands.

Effects under Alternative A

Land Tenure Adjustments

The BLM would continue to have the following retention and disposal conditions:

- Retain 2,936,548 acres of BLM-administered land (excluding the NCAs) (41 percent);
- Potentially retain 1,281,383 acres of BLM-administered land (excluding the NCAs) (18 percent); and
- Potentially dispose of 2,989,030 acres of BLM-administered land (excluding the NCAs) (41 percent).

There would be no new impacts, and ongoing impacts would continue. With the current scattered land pattern of the WD area, the BLM would continue to struggle with the management of isolated or small parcels. Checkerboard areas of land would likely be categorized for land tenure adjustments to consolidate and improve management of public lands.

Effects under Alternative B

The BLM would manage for the following retention and disposal conditions:

- Retain 5,076,295 acres of BLM-administered land (excluding the NCAs) (70 percent)
- Potentially dispose of 2,128,543 acres of BLM-administered land (excluding the NCAs) (30 percent) and

- Manage 716,528 acres as ROW avoidance areas.

Compared to Alternative A, the BLM would retain a larger percentage of land. This would allow for more public uses to continue occurring. It is assumed that retention and disposal actions would address the scattered land pattern of the WD area, thereby making land management more effective. Managing ROW avoidance areas would require development of additional mitigation measures and stipulations to protect wildlife habitat.

Effects under Alternative C

The BLM would manage for the following retention and disposal conditions:

- Retain 5,989,664 acres of BLM-administered land (excluding the NCAs) (83 percent)
- Potentially dispose of 1,215,963 acres of BLM-administered land (excluding the NCAs) (17 percent) and
- Manage 1,279,481 acres as ROW exclusion areas and 869,645 acres as ROW avoidance areas.

Compared to Alternatives A and B, the BLM would retain a larger percentage of land. This would allow for more public uses to continue occurring. It is assumed that retention and disposal actions would address the scattered land pattern of the WD area, thereby making land management more effective. Alternative C would include ROW exclusion areas where ROWs would not be allowed. Public demand for ROWs would potentially not be met and the degree of multiple use development on public lands would be affected. Alternative C would also include avoidance areas. Additional stipulations and mitigation measures would be applied to protect wildlife habitat. Alternative C would also require ROWs associated with water importation/exportation to be fully mitigated to reduce adverse impacts.

Effects under Alternative D

The BLM would manage for the following retention and disposal conditions:

- Retain 5,882,922 acres of BLM-administered land (excluding the NCAs) (82 percent);
- Potentially dispose of 1,350,263 acres of BLM-administered land (excluding the NCAs) (18 percent). And
- Manage 1,199,539 acres as ROW exclusion areas and 1,773,199 acres as ROW avoidance areas.

Compared to Alternatives A and B, the BLM would retain a larger percentage of land. This would allow for more public uses to continue occurring. It is assumed that retention and disposal actions would address the scattered land pattern of the WD area, thereby making land management more effective. Fewer acres would be managed as ROW exclusion areas as compared to Alternative C. There would be more avoidance areas compared to Alternative C. Use restrictions applicable to ROWs would be limited and may limit ROWs compared to public demands for a variety of uses that require ROWs. Avoidance and exclusion areas would protect wildlife habitat areas to varying degrees based on the number of acres managed as exclusion or avoidance. ROWs related to water importation/exportation would be allowed subject to perennial yield requirements and development of mitigation measures in order to reach rangeland health standards.

Lands and Realty: Effects from ACEC/ RNA Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from ACEC/RNA management.

Effects under Alternative A

The BLM would maintain the designation of the Osgood Mountains ACEC. Incompatible land uses would continue to be prohibited to protect the special qualities of the ACEC. There would be no new impacts.

Effects under Alternative B

The impacts would be the same as those described under Alternative A.

Effects under Alternative C

The BLM would maintain the designation of the Osgood Mountains ACEC. It would also designate the Pine Forest, Raised Bog, and Stillwater ACECs. ACEC designations would restrict ROW grants associated with communication sites. Incompatible land uses would continue to be prohibited.

Effects under Alternative D

The impacts would be the same as those under Alternative C.

Lands and Realty: Effects from Backcountry Byways Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect land use and land designations.

Lands and Realty: Effects from National Historic Trails Management

Effects Common to All Alternatives

The impacts would be the same as those under Effects from Cultural Resources Management.

Effects under Alternative A

The impacts would be the same as those under Effects from Cultural Resources Management.

Effects under Alternative B

The impacts would be the same as those under Alternative A.

Effects under Alternative C

The impacts would be the same as those under Alternative A.

Effects under Alternative D

The impacts would be the same as those under Alternative A.

Lands and Realty: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from WSR management.

Effects under Alternative A

Under Alternative A, eligible river corridors would be given protection either through continued interim protective management or the development of Comprehensive River Management Plans. In both cases, new rights of way would be discouraged within the 13,583 acres of eligible corridors except where specifically authorized by other plans, orders, or laws. When no other alternative could be found, new activity within new or existing rights of ways would be required to minimize or negate impacts that would detract from the ORVs that originally led to segment eligibility. Because none of the eligible section is interrupted by private land holdings, there would be no incentive to acquire lands to assist in preservation of ORVs.

Effects under Alternative B

There would be no impacts on lands or realty from WSR management under Alternative B.

Effects under Alternative C

Impacts on lands and realty from WSR management under Alternative C would be the same as those described under Alternative A.

Effects under Alternative D

Under this alternative, there likely would be no impacts on lands or realty from WSR management as long as WSA, priority habitat, and priority watershed management, as outlined in the remainder of the RMP are implemented. In the case that these management actions are not implemented or are removed after implementation, interim protective management measures would be implemented within the 13,583 acres of eligible WSR corridors, which would have effects identical to those described under Alternatives A and C.

Lands and Realty: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

The BLM would manage the 13 WSAs under Manual #6330 Management of Wilderness Study Areas (BLM 2012e) for Lands under Wilderness Review until Congress either designates these areas or releases them for other purposes. If released by Congress, the BLM would manage all or parts of 13 WSAs for purposes other than wilderness using BMPs, land use restrictions, authorization stipulations, and mitigation measures to protect resources. Land uses in WSAs released from consideration for wilderness would likely increase, because the BMPs, land use restrictions,

authorization stipulations, and mitigation measures would be less restrictive than under Manual #6330 for Lands under Wilderness Review. There would be no new impacts on land uses and land designations.

Effects under Alternative A

There would be no impacts because there are no specific actions that are likely to affect land use and land designations.

Effects under Alternative B

The impacts would be the same as those under Alternative A.

Effects under Alternative C

The BLM would protect wilderness characteristics with a designation of closed to mineral leasing, ROW exclusion zones, and priority habitat 1 in the following areas:

- Bluewing Mountains (25,651 acres);
- North Sahwave Mountains (45,686 acres);
- Fencemaker Area of the East Range (50,282 acres);
- Portion of the Tobin Range between the China Mountain WSA and the Mount Tobin WSA (33,854 acres);
- Granite Peak (43,202 acres);
- Buckhorn Peak (23,399 acres); and
- Warm Springs (18,149 acres).

This would limit certain types of land use activities. Conversely, it would promote types of activities that are incompatible with the actions being limited.

Effects under Alternative D

The impacts would be the same as those under Alternative A.

Lands and Realty: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect land use and land designations.

Lands and Realty: Effects from Public Health and Safety Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect land use and land designations.

Lands and Realty: Effects from Sustainable Development Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from sustainable development management.

Effects under Alternative A

Alternative A does not address specific sustainable development actions. The impacts identified below for Alternatives B, C, and D would not necessarily occur. There would be no new impacts.

Effects under Alternative B

Alternative B would pose some limitations to disposal of lands and authorization of ROWs within the WD in the long term.

Requirements for proposed reuse of lands could have short-term impacts because coordination and public input could slow down implementing lands and realty actions. In the long term, however, lands and realty actions would be implemented in a more sustainable way.

Actions regarding mineral operation sites would have impacts similar to those for proposed reuse of lands. This is because more planning would be required in the initial stages but would provide for long-term sustainable management of lands.

Effects under Alternative C

Alternative C would pose the greatest limitations to disposal of lands and authorization of ROWs within the WD in the long term.

Requirements for proposed reuse of lands could have impacts similar to those described under Alternative B.

Actions regarding mineral operation sites would be the most restricted under Alternative C. Impacts would be similar to those for proposed reuse of lands.

Effects under Alternative D

Alternative D would pose some limitations to disposal of lands and authorization of ROWs within the WD in the long term.

Requirements for proposed reuse of lands could have impacts similar to those described under Alternative B.

Lands and Realty: Cumulative Effects

Past and Present Actions

Past and present impacts resulting from livestock grazing has posed few impacts on lands and realty actions and include issues relating to public access. BMPs, SOPs, mitigation measures, and permit stipulations designed to protect special status species have impacted operational costs and locations of lands and realty actions. There are few impacts associated with recreation use to lands and realty

actions. There has been few known impact from WHB management. Wildfire threats have included burned structures and potential shut down of operations associated with lands and realty authorizations. These potential impacts have been mitigated through construction of strategically placed fuelbreaks and suppression priorities.

Reasonably Foreseeable Actions

Impacts would be similar to the past and present actions for livestock grazing, WHB management and recreation. Management strategies to acquire easements and other ROWs would limit impacts from access restrictions. Management actions and designated priority wildlife habitat, watershed management, avoidance and exclusions areas and special status species management would designate areas where rights of ways would be restricted or not allowed and would affect project feasibility, depending on location. The designation of ROW avoidance and exclusion areas is expected to reduce the number of projects in those areas, while increasing their cost. This would result in the preservation of intact priority wildlife and special status species habitat. Landscape scale fuel breaks would further protect ROWs infrastructure from wildland fire.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Incremental cumulative impacts would be similar for all alternatives with respect to livestock grazing. Management strategies and permit requirements, including implementation of mitigation measures and permit stipulations applicable to renewable energy development to protect or reduce impacts on resources, would increase costs to those seeking lands and realty authorizations. Use restrictions in designated priority wildlife habitat and watershed, and avoidance and exclusion areas would protect limit or prevent uses. The impacts on lands and realty actions would vary based on the number of acres designated with use restrictions and the type or feasibility of operations proposed in those areas. Lands and realty actions would not occur in some instances. Land tenure adjustments would simplify management of public lands located in checkerboard areas where public and private lands intermix.

Overall, the incremental impacts on lands and realty from lands would be moderate based on the size as fewer public lands would be available for rights of way.

4.4 SPECIAL DESIGNATIONS

This section addresses impacts on special designations, which include ACECs, WSR segments, BCBs, Wilderness Areas, WSAs, and WWV sites. Impacts on wilderness characteristics are also addressed in this section.

There are seven Wilderness Areas and portions of two others within the WD administrative boundary. They are within the planning boundary of the Black Rock NCA. Special designation areas addressed in the Black Rock NCA plan will not be addressed in the Winnemucca RMP. National Historic Trails are addressed in Section 4.2.13, Cultural Resources.

4.4.1 Areas of Critical Environmental Concern

Summary

In general, effects common to all alternatives involve actions that maintain or improve the qualities ACECs. Administrative designations addressed in this section include that of Areas of Critical Environmental Concern (ACECs). Potential ACEC designated areas were identified in the ACEC Relevance and Importance Evaluations (BLM 2006d), Appendix F.

Under Alternative A, the BLM would continue to rely on dated management framework plans, along with current policy and guidance for the Osgood Mountains ACEC. These plans are silent on areas recently proposed for ACECs and WSRs.

Methods of Analysis

Methods and Assumptions

To the extent practical, spatial data were used to compare the proposed management of each alternative to existing conditions. In absence of quantitative data, potential impacts from each alternative are based on interdisciplinary team knowledge of the resources and the planning area, and on information gathered from the public during the planning process. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were assessed according to the following assumptions:

- There would be an increase in BLM management to protect values in special designation ACECs;
- The proposed management prescribed for an area with a special designation would protect the qualities that are associated with the special designation for the area;
- Activities proposed that would not initially meet objectives for areas with special designations would be mitigated to the extent needed to meet the objectives; and
- Fuel treatments would reduce fuel loads and decrease the risk of catastrophic fire that would destroy vegetation ACEC values. Actions to limit vegetation treatments could prevent ecosystem health improvements in the long term but would minimize disturbance to certain areas in the short term.

Areas of Critical Environmental Concern: Effects from Air Quality Management

Effects Common to All Alternatives

Air quality protections would benefit ecosystems by reducing air pollution and maintain ACEC values.

Effects under Alternative A

The Pine Forest, Raised Bog, and Stillwater ACECs would not be designated under Alternative A. The BLM would still comply with air quality regulations and use smoke modeling for prescribed fire.

Effects under Alternative B

Alternative B allows for 106,696 acres of allowing conditional fire suppression management for a benefit. Impacts on air quality would continue over a longer period of time if allowing conditional fire suppression management for a benefit is implemented. Allowing conditional fire suppression management for a benefit may impact air quality from smoke, which would be mitigated through smoke modeling and compliance with air quality regulations.

Effects under Alternative C

The BLM would comply with air quality regulations and would use smoke modeling for wildland fire. Air quality management and air quality impacts for allowing conditional fire suppression management for a benefit would not occur under this alternative.

Effects under Alternative D

Allowing conditional fire suppression management for a benefit may impact air quality from smoke in portions of the Pine Forest and Stillwater ACECs, which would be mitigated through smoke modeling and compliance with air quality regulations.

Areas of Critical Environmental Concern: Effects from Geology Management

Effects Common to All Alternatives

Managing unique geologic resources would have no impact on ACECs. Any impacts are limited as multiple uses are restricted within ACECs. Applying mitigation measures to avoid unique geologic resources would also serve to maintain the integrity of the ACEC.

Areas of Critical Environmental Concern: Effects from Soil Resources Management

Effects Common to All Alternatives

Soil erosion reduction measures, including seeding and improving vegetative cover, would reduce compaction, would increase infiltration, and would improve ecosystem health over the short term. These impacts could extend into long-term benefits from increased vegetative productivity and improved habitat connectivity. All of these effects would help to enhance ACEC values.

Effects under Alternative A

Land reclamation and rehabilitation in Alternative A would protect soil disturbed or burned from wind and water erosion. Impacts from protecting soils would be minimal because only one ACEC, totaling 60 acres would be designated. The Osgood Mountains ACEC values would continue to be protected.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Implementation of permit stipulations, BMPs, and mitigation measures would help prevent wind and water erosion to soils with ACECs. Land reclamation and rehabilitation actions under Alternative C would require reclamation of all surface-disturbing activities. This would allow for native vegetation to reestablish and would maintain ACEC wildlife habitat and cultural and scientific values over the long term.

Soil compaction prevention measures are the most stringent under this alternative, providing for seasonal use restrictions. This would benefit ACECs by reducing the potential for compaction.

Effects under Alternative D

Impacts would be similar to Alternative C, but land reclamation actions under Alternative D would provide a more flexible approach to land reclamation. Impacts would vary depending on how and if reclamation was achieved, including whether native or nonnative seeds were used in revegetating lands. Impacts would be long term.

Soil compaction prevention measures would implement seasonal use restrictions, which would occur on a case-by-case basis. These measures would improve vegetation health and vigor from decreased soil compaction and increased infiltration over the long term.

Areas of Critical Environmental Concern: Effects from Water Resources Management

Effects under Alternative A

One ACEC is proposed under Alternative A, the Osgood Mountains ACEC. Impacts from water management would be minimal because there are no priority watershed areas within this ACEC boundary.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Of the four ACECs proposed under Alternative C, the only one containing priority watersheds is the Pine Forest ACEC. The priority watershed in this area is approximately eight percent of the ACEC area and is based on recovery LCT habitat. Use restrictions for saleable minerals and solid and fluid mineral leasing activities under ACEC proposed management would be the same as those proposed under water resources management. However, water resources management extends the exclusionary restrictions to all discretionary actions that are incompatible for the resource for which the priority watershed was created.

Effects under Alternative D

Like Alternative C, the only ACEC affected by water resources management actions would be the Pine Forest ACEC. ACEC management restrictions would be more restrictive than those proposed under water resources. For example, ACECs would be closed to saleable minerals but priority watersheds would be open to government use only. ACECs would be closed to solid and fluid

mineral leasing, but priority watersheds would be open to these uses with NSO/NSD restrictions. However, the approximately eight percent of the Pine Forest ACEC containing priority watersheds would be further protected from surface disturbing activities under water resources management through ROW exclusions.

Areas of Critical Environmental Concern: Effects from Vegetation—Forest/Woodland Products Management

Effects under Alternative A

There would be no impacts on the Osgood Mountains ACEC because no woodlands are within the ACEC boundary.

Effects under Alternative B

The impacts under this alternative would be the same as those described under Alternative A.

Effects under Alternative C

There would be no impacts from woodland and forestry management within the Osgood Mountains and the Raised Bog ACECs. Within the Pine Forest and Stillwater ACECs, Alternative C would protect stands from being harvested for forest products. Areas that exhibit or are characterized by stands of old growth forests would be further protected. Woodland areas within the ACECs would have more intensive management, including development of mitigation measures to allow natural ecosystem functions to occur. Allowable treatments to improve stand health would be limited to mechanical or biological treatments, which may not be as effective as other treatments (prescribed fire or chemical controls) that are available, and improvement in stand health may take longer.

Effects under Alternative D

There would be no impacts from woodland and forestry management within the Osgood Mountains and the Raised Bog ACECs. Within the Stillwater ACEC, Alternative D would allow harvesting for forest products, and areas that exhibit or are characterized by stands of old growth forests would be further protected. Woodland areas within the ACECs would have more intensive management, including development of mitigation measures to allow natural ecosystem functions to occur, consistent with the ACEC values that established designation. Allowable treatments to improve stand health include mechanical, chemical, prescribed fire, and biological treatments, which offer an assortment of effective treatments to improve stand health. Stand health would improve in a shorter timeframe. This alternative would also allow for more opportunity to harvest juniper for woodland products within the Stillwater ACEC. There would be no impacts on the Pine Forest ACEC from woodland harvesting because there would be no designated harvest areas identified with the ACEC boundary.

Areas of Critical Environmental Concern: Effects from Vegetation—Invasive and Noxious Species

Effects Common to All Alternatives

Actions to decrease weeds would maintain ecosystem health and habitat values by maintaining native species in both the short term and long term. Weeds management would help maintain any remarkable or outstanding values.

Effects under Alternative A

Impacts from weed management would be minimal because only 60 acres within the Osgood Mountains ACEC would be designated. Control of weeds to protect sensitive plants would become a priority in the event that weeds were established and spreading within the ACEC.

Effects under Alternative B

Impacts from weed management would be similar to those under Alternative A.

Effects under Alternative C

Short-term weed control methods would be limited to mechanical and biological treatments, which would take longer to control weeds and improve rangeland health. Long-term ecological health may be realized because no residual effects from chemicals would occur.

Effects under Alternative D

Short-term weed control methods include a variety of treatments, including chemical and prescribed fire. Short-term weed control would improve ecosystem health. Long-term improvements to ecosystems would occur within shorter timeframes. Weed control would be a priority within ACECs in order to maintain ACEC designation values (wildlife habitat, cultural, scientific, sensitive plants).

Areas of Critical Environmental Concern: Effects from Chemical and Biological Control

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect ACECs.

Areas of Critical Environmental Concern: Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Improving degraded rangeland would reduce the prevalence of invasive species and improve species diversity and resilience. With healthier native vegetation, ACEC values with respect to rangelands would be improved over the long term.

Effects under Alternative A

There would be few impacts on the Osgood Mountains ACEC from vegetation rangeland management. Mitigation measures would be developed to protect the Osgood Mountains milkvetch.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Option 1

Vegetation management would include rehabilitation of areas disturbed or burned and would improve areas from FRCC 3 to FRCC 2 on 70,000 acres of rangeland. These actions would stabilize areas, would deter the establishment of weeds, and would allow for long-term reestablishment of native plant communities within ACECs.

Option 2

Prohibiting grazing would allow fuels to build up within the ACECs, increasing the risk of fire over the long term.

Effects under Alternative D

Impacts would be similar to those described under Alternative C. Vegetation management would include rehabilitation of areas disturbed or burned and would improve areas from FRCC 3 to FRCC 2 on 70,000 acres of rangeland. Vegetation manipulation treatments would include mechanical, biological, prescribed fire, and chemical treatments. Vegetative communities within the ACECs would improve rangeland health through the use of a wider array of treatment methods.

Areas of Critical Environmental Concern: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Improving PFC within ACECs would improve functioning conditions of riparian and wetland areas and would improve riparian vegetation health.

Effects under Alternative A

There would be few impacts from riparian and wetlands management on the Osgood Mountains ACEC because there are no riparian and wetland areas within the ACEC.

Effects under Alternative B

Vegetation improvement treatments for riparian and wetlands management would have impacts similar to those described under Alternative A.

Effects under Alternative C

Option 1

The greatest amount of riparian areas and wetlands (a minimum of 85 percent) would be restored to PFC under this alternative, which would improve functioning conditions and vegetative health

within riparian and wetland areas. Implementation of SOPs and BMPs would also reduce impacts on riparian and wetland areas within ACECs from other public land uses.

Option 2

Removing grazing from lands in the WD would benefit riparian and wetland areas because there would be no grazing impacts causing soil compaction, weed spread or introduction, and trampling of vegetation over the long term from livestock. However, fuels would be allowed to build up within riparian and wetland areas, which would make ACECs vulnerable to wildfire.

Effects under Alternative D

Riparian areas and wetlands (85 percent) would be progressing toward or restored to PFC under this alternative, which would improve functioning conditions and vegetative health within riparian and wetland areas. Implementation of SOPs and BMPs would also reduce impacts on riparian and wetland areas within ACECs from other public land uses.

Areas of Critical Environmental Concern: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

Fish habitat management actions include maintaining and improving lentic and lotic fish habitat, including monitoring aquatic and riparian habitat conditions. Implementation of BMPs and SOPs would reduce adverse impacts on fish habitat areas within ACEC.

Wildlife management actions include improving and protecting waterfowl habitats, protecting migratory birds and their nests, and maintaining and enhancing wildlife habitat. Implementation of BMPs and SOPs would reduce adverse impacts and would improve wildlife habitat. Direct impacts on migratory birds are anticipated to be low due to requirements for pre-disturbance inventories and implementation of seasonal use restrictions or avoidance of nests.

Effects under Alternative A

Impacts on the Osgood Mountains ACEC would be minimal due to the size and type of wildlife habitat within the ACEC. Implementation of mitigation measures and use restrictions would reduce impacts on wildlife habitat within the ACEC. There would be no impacts from fish management within the Osgood Mountains ACEC.

Effects under Alternative B

Impacts would be the same as those described under Alternative A.

Effects under Alternative C

Impacts on the Osgood Mountains ACEC would be similar to those described under Alternative A. Priority wildlife habitat areas would be established within the Pine Forest ACEC. Wildlife habitat would be protected and restored because land treatments and mitigation measures would be emphasized within this ACEC. In all ACECs, mitigation measures and BMPs would be implemented to achieve desired wildlife population and habitat conditions, ultimately reducing adverse impacts. Few wildlife management impacts would occur within the Raised Bog ACEC. No

artificial waters would be developed within any of the ACECs, so wildlife populations would be constrained to existing water sources. There would be no impacts from fisheries management within the Osgood Mountains, Stillwater, and Raised Bog ACECs. Management actions to limit stream bank alteration would improve stream bank channel stability within the Pine Forest ACEC.

Effects under Alternative D

Impacts on the Osgood Mountains ACEC would be similar to those described under Alternative A.

Few wildlife management impacts would occur within the Raised Bog ACEC due to the size and nature of habitat within this ACEC. In all ACECs, mitigation measures and BMP would be implemented to achieve desired wildlife population and habitat conditions, ultimately reducing any adverse impacts. Artificial waters would be developed within any of the ACECs, so wildlife populations could expand as new areas would be available as habitat. There would be no impacts from fisheries management within the Osgood Mountains, Stillwater, and Raised Bog ACECs. Impacts from fisheries management would be similar to those described under Alternative C.

Areas of Critical Environmental Concern: Effects from Special Status Species Management

Effects Common to All Alternatives

Special status species management across all alternatives would prevent activities leading to listing of species and would require plant inventories, sage-grouse, pygmy rabbit, bat, and raptor avoidance and mitigation and monitoring. Actions that avoid impacts on listed or sensitive species or their habitat would protect and preserve ACEC values.

Restrictions on uses near special status plants, sage-grouse and sage-grouse leks (courtship and mating areas), pygmy rabbits, bat habitat, and raptors would reduce disturbance to these areas and would protect sensitive species habitat and enhance ACEC values.

Effects under Alternative A

The BLM would continue to manage the Osgood Mountains ACEC for the protection of the milkvetch. This would continue to protect the special qualities associated with the designation of the ACEC. Certain uses or activities may be prohibited within the ACEC to protect sensitive plants. Implementation of permit stipulations, BMPs, and mitigation measures would maintain and protect the special values of the ACEC.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Alternative C places the greatest amount of restrictions on activities that occur near special status species and their habitats in order to protect sensitive species. Tree removal control within a mile of active ferruginous hawk nests would protect northern goshawk nesting areas. Mitigation measures, including use restrictions and avoidance and providing alternate nest sites would maintain ACEC wildlife and special status species habitat enhancing ACEC values. Wildlife priority 1 habitat areas

within ACEC boundaries would further emphasize and prioritize development of mitigation measures and would permit stipulations to protect sensitive species habitat.

Effects under Alternative D

Special status species management would include development of BMPs and mitigation measures to protect habitat within the ACECs. Protecting sensitive species habitat would enhance and protect ACEC qualities.

Areas of Critical Environmental Concern: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Managing WHB within HMAs and HAs that overlap ACEC boundaries includes controlling horse and burro populations based on AML. Controlling herd size would limit and reduce the potential for overgrazing areas. Seasonal limitations on certain activities, such as motor vehicle racing, would limit uses in areas and would maintain ACEC qualities. Population control measures would reduce the impact of WHB on lands by decreasing the risk of soil compaction, trampling, and the introduction or spread of weeds. This would help maintain ecosystem health and ACEC values.

Effects under Alternative A

There would be no impacts on the Osgood Mountains ACEC from WHB management because the ACEC is not within an HMA or HA. There are also no WHB populations in the area of the Osgood Mountains ACEC.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

There would be no impacts from WHB management to the Pine Forest, Raised Bog, and Osgood Mountains ACECs because these ACEC boundaries are not within HMAs or HAs. A portion of the North Stillwater HMA is within the Stillwater ACEC. The least aggressive population control measures would be used in Alternative C, and the established AML would be higher. Fertility control measures would not be used, so WHB populations would increase within shorter timeframes. These spikes in population growth would increase soil compaction, trampling, and grazing in areas until animals are removed to achieve AML. Mitigation measures to protect WHB are the greatest under this alternative and would prohibit or limit certain uses in HMAs. Maintaining higher WHB populations would degrade some ACEC values in the short term.

Effects under Alternative D

There would be no impacts from WHB management to the Pine Forest, Raised Bog, and Osgood Mountains ACECs because these ACEC boundaries are not within HMAs or HAs. A portion of the North Stillwater Herd Management Area is within the Stillwater ACEC. This alternative has more aggressive management actions to control WHB populations. Management actions to gather excess WHB to the low AML levels when populations exceed the upper AML limit would be emphasized.

Also fertility control inhibitors would be used to slow population growth rates, so WHB populations would increase within longer timeframes. Impacts from population growth would gradually increase soil compaction, trampling, and grazing in areas until animals are removed to achieve AML. Impacts on ACECs values would be maintained under this alternative.

Areas of Critical Environmental Concern: Effects from Wildland Fire Management

Effects Common to All Alternatives

BLM would manage suppression in ACEC areas based on multiple objectives. ACEC areas would be prioritized for fire suppression response, reducing the risk of large wildfire. Wildfire suppression would prevent catastrophic destruction of vegetation and would preserve ACEC values over the long term. Fuels management also would protect ACEC values over the long term through the construction of fuel breaks. Emergency stabilization and rehabilitation management would stabilize and rehabilitate areas burned within ACECs, allowing for improvement in ecosystem health in the long term that has been damaged by wildland fire.

Effects under Alternative A

Prescribed fire and other fuel break treatments would be implemented, as needed, to protect the sensitive Osgood Mountains milkvetch. One ACEC would be designated therefore only 60 acres would be subject to fire suppression prioritization. Use restrictions limiting facilities within ACECs would reduce suppression priorities to protect property.

Effects under Alternative B

The impacts on the Osgood Mountains ACEC would be the same as those under Alternative A. This ACEC would not be impacted by the conditional fire suppression areas where fire could be used for a benefit because this ACEC does not fall in any of the identified areas.

Effects under Alternative C

There would be no beneficial effects from allowing fire, as described under Alternative D.

Constructing fuel breaks would be limited to using biological and mechanical treatments only. Fuel breaks to protect ACEC values would be less effective compared to other treatment methods. ES&R treatments would be limited to seeding with native species. Generally these species take longer to establish, thereby leaving burned areas more susceptible to erosion in the short term. Establishing native vegetation would improve rangeland health in the long term.

Four ACECs totaling about 781,109 acres would be subject to priority suppression response.

Effects under Alternative D

This alternative emphasizes 2,260 acres of the Pine Forest ACEC and 3,081 acres of the Stillwater ACEC for conditional suppression management for a benefit when it would benefit forest and vegetation community health. These actions would improve ecosystem health and would protect the special qualities associated with the designations of the ACECs.

Fuel breaks would not be limited to certain treatment methods. Protection of ACEC values would be more effective in areas based on opportunities for multiple fuel break treatment methods. ES&R treatments would not be limited to seeding with native species. Using both natives and nonnatives would expedite establishment of vegetation and would reduce short-term erosion.

Areas of Critical Environmental Concern: Effects from Cultural Resources Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from cultural resource management.

Effects under Alternative A

Few, if any impacts would occur from cultural resource management to the Osgood Mountains ACEC. Implementation of SOPs, BMPs, and mitigation measures may limit location of certain uses within the ACEC, while protecting cultural resources and maintaining ACEC values.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Impacts on the Osgood Mountains, Raised Bog, and Pine Forest ACECs would be similar to those described under Alternative A. The Stillwater ACEC would include management actions that would prohibit woodland product harvesting in order to protect special cultural values associated within this area. Mitigation measures would be developed for the Pine Forest ACEC to protect aspen carvings, which would also maintain ACEC wildlife habitat values.

Effects under Alternative D

Impacts on the Osgood Mountains, Raised Bog, and Pine Forest ACECs would be similar to those described under Alternative A. The Stillwater ACEC would restrict woodland harvesting, subject to implementation of SOPs, BMP, and mitigation measures. Uses may be limited within the ACECs to protect cultural resources and maintain ACEC values.

Areas of Critical Environmental Concern: Effects from Tribal Consultation

Effects Common to All Alternatives

Consulting with tribes to identify culturally significant plants, important habitats, and traditional use locations would emphasize protection of natural resources. This could limit the location of ground disturbance and other uses and maintain and improve ACEC values over the long term in certain areas.

Areas of Critical Environmental Concern: Effects from Paleontological Resources Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect areas within ACEC boundaries.

Areas of Critical Environmental Concern: Effects from Visual Resources Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from visual resources management.

Effects under Alternative A

The BLM would manage visual resources subject to VRM classification established in the Paradise-Denio and Sonoma-Gerlach MFPs. The Osgood Mountains ACEC would continue to be managed as VRM Class IV. Changes may subordinate character but must reflect what could be a natural occurrence under class IV. The landscapes within the ACEC would continue to manage structure locations and to blend colors, line, and contrast in order to maintain scenic qualities within the ACEC.

Effects under Alternative B

The BLM would manage the Osgood Mountains ACEC and associated landscapes as VRM Class III. Under Class II, changes would not be evident. Uses and facilities would be managed to blend with the surrounding landscapes. Changes may subordinate the character of the setting but must reflect what could be a natural occurrence. More mitigation measures would be implemented so that activities or structures would have fewer scenic impacts which would maintain the visual character of the Osgood Mountains ACEC.

Effects under Alternative C

The BLM would manage all ACECs and associated landscapes as VRM Class II. The impacts would be similar to those described under alternative B. The visual character of all the ACECs would be maintained. Mitigation measures would be developed and implemented in order to blend or locate facilities to the surrounding landscape for all ACECs.

Effects under Alternative D

Impacts would be the same as those under Alternative B.

Areas of Critical Environmental Concern: Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect ACECs.

Areas of Critical Environmental Concern: Effects from Livestock Grazing Management

Effects Common to All Alternatives

Managing livestock and maintaining land health standards would protect soils and vegetation from overgrazing, thereby maintaining ACEC values. Authorizing range improvements would allow for better management of livestock and would protect areas from overgrazing.

Effects under Alternative A

The BLM would continue to allow livestock grazing and range improvements in the Osgood Mountains ACEC. Mitigation measures would be developed and implemented to protect sensitive plant species.

Effects under Alternative B

The impacts on the Osgood Mountains ACEC would be the same as those under Alternative A.

Effects under Alternative C

Option 1

All ACEC areas would continue to be available for grazing. Achieving land health standards would protect wildlife habitat and cultural values, as well as scientific and sensitive plant areas, from excessive grazing. More restrictions would be applied when developing livestock waters, which would affect disbursement of livestock and provide benefits to wildlife habitat. The ACEC values that the designations are intended to protect would be maintained.

Option 2

No grazing would be allowed in ACECs under Alternative C, Option 2. By preventing livestock use, impacts from grazing to vegetation and soils would not occur and could improve natural habitat conditions in the areas of the ACECs in the short term. Long-term fuel buildup may make areas within ACECs more vulnerable to wildland fire.

Effects under Alternative D

The impacts on the Osgood Mountains ACEC would be the same as those under Alternative A. The impacts on the Pine Forest, Raised Bog, and Stillwater ACECs would be the same as those under Alternative C, Option 1.

Areas of Critical Environmental Concern: Effects from Minerals Management

Effects Common to All Alternatives

Impacts on ACEC values could result from fluid, leasable, and locatable mineral development and mineral material sales or disposal. Impacts associated with these actions include increased human presence, machinery, noise, loss or injury to plants and soils due to excavation or trampling, disturbance from mineral extraction, and increased exposure to dust and other contaminants

associated with construction necessary for mineral development and use of access roads. Special status species habitat would be mitigated or avoided, which would protect ACECs.

RFDs

A reasonably foreseeable development scenario was developed with respect to future oil and gas and geothermal leasing (see Mineral Assessment Report, May 2006 [BLM 2006a]), Appendix I [updated in 2011). Future actions based on reasonable development could result in indirect impacts. Future exploration and development scenarios could involve new structures, roads, infrastructure, and operations. These new structures, roads, and operations would not be located within the Osgood Mountains ACEC because of the no surface occupancy stipulations.

Effects under Alternative A

Saleable

The Osgood Mountains ACEC would be closed to mineral material disposal, which would protect the ACEC from mineral material activities.

Fluids

Fluid mineral development would be limited to no surface occupancy stipulation within the Osgood Mountains ACEC, which would protect sensitive plants.

Solid

Solid mineral leasing and development would be allowed in the Osgood Mountains ACEC subject to development and implementation of mitigation measures to protect sensitive plants. There is a low probability of solid mineral resources within the Osgood Mountains ACEC.

Locatable

Locatable mineral development would be allowed in the Osgood Mountains ACEC, subject to development and implementation of mitigation measures and authorization stipulations necessary to protect sensitive plants. Impacts could be extensive, based on the amount or degree of surface disturbance from exploration and mine development.

Effects under Alternative B

Saleable

Impacts would be the same as those under Alternative A.

Fluid

The Osgood Mountains ACEC would be closed to leasing, and there would be no surface occupancy. This would protect the special qualities of the ACEC from fluid mineral activities.

Solid

There would be no surface occupancy for solid mineral development in the Osgood Mountains ACEC because the ACEC would be within a two-mile radius of known sensitive plants. This would protect the special qualities of the ACEC from solid mineral development activities.

Locatable

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Saleable

ACECs would be closed to mineral material disposal, which would protect the special qualities of the ACECs from mineral material activities.

Fluid

The Osgood Mountains, Pine Forest, Raised Bog, and Stillwater ACECs would be closed to leasing, which would protect the special qualities of the ACECs from fluid mineral activities.

Solid

The Osgood Mountains, Pine Forest, Raised Bog, and Stillwater ACECs would be closed to solid mineral development. This would protect the special qualities of the ACECs from solid mineral development.

Locatable

Under Alternative C, the Osgood Mountains, Pine Forest, Raised Bog, and Stillwater ACECs would continue to be open, subject to stipulations and mitigation measures applicable to locatable mineral development. These ACECs are identified for potential withdrawal from locatable mineral development. Locatable mineral development could make the ACECs more susceptible to harming the special qualities of the areas. These impacts would not be expected to occur if the ACECs are withdrawn from locatable mineral development.

Effects under Alternative D

Saleable

The impacts from mineral material disposal actions would be the same as those under Alternative C.

Fluid

The impacts from fluid mineral leasing on ACECs would be the same as those under Alternative C.

Solid

The impacts from solid mineral development on ACECs would be the same as those under Alternative C.

Locatable

Impacts would be similar as those under Alternative C.

Areas of Critical Environmental Concern: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

To manage OHV use, the Transportation Plan would be updated and would account for special management areas, such as ACECs. Specific sites would be subject to NEPA analysis to minimize impacts on ACECs.

Effects under Alternative A

Under Alternative A, the Osgood Mountains ACEC would continue to be designated as open to OHV use. Unrestricted OHV travel could cause deterioration of the special qualities used to designate this ACEC by disturbing sensitive plant species. The remote Osgood Mountains ACEC is not a popular dispersed recreation use area, so impacts would be expected to remain low unless recreation use increases.

Effects under Alternative B

The impacts from OHV use designations would be similar to those under Alternative A. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed.

Effects under Alternative C

Under Alternative C, all ACECs would be designated as limited for OHV use. This would afford greater protection for the special qualities used to designate the area as an ACEC by reducing the opportunities for scarring the terrain and disturbing vegetation, causing associated erosion from OHV use. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed.

Effects under Alternative D

The impacts from OHV use designations would be the same as those under Alternative C for travel management. Under this alternative, the Pine Forest SRMA is within the Pine Forest ACEC. More facilities could be developed, which could increase recreation visitation within the ACEC. Dispersed recreation impacts include more travel along existing roads and damage to wildlife habitat due to soil compaction and vegetation trampling. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed.

Areas of Critical Environmental Concern: Effects from Renewable Energy Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from renewable energy management.

Effects under Alternative A

The Osgood Mountains ACEC would continue to be closed to wind energy development. Sensitive plant species would be protected from wind energy exploration and development.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Wind energy would be allowed in the ACECs. Permit restrictions, stipulations, and mitigation measures would be developed and implemented to protect ACEC resources. Areas within the Pine Forest ACEC would be excluded from wind energy because of ROW exclusion areas that overlap the ACEC boundary. These areas would protect ACEC wildlife habitat from discretionary renewable energy ROW actions.

Effects under Alternative D

Wind energy would be allowed in the ACECs. Permit restrictions, stipulations, and mitigation measures would be developed and implemented to protect ACEC resource values. Areas within the Pine Forest ACEC would be identified as avoidance areas, which would constrain renewable wind energy development. ROW issuance would be restricted on a case-by-case basis. The avoidance areas would protect ACEC wildlife habitat from discretionary ROW actions.

Areas of Critical Environmental Concern: Effects from Transportation and Access Management

Effects Common to All Alternatives

Maintaining roads necessary for fire suppression and public safety would allow for increased human presence, noise, and access to certain areas, which could degrade ACEC values. However, roads would allow for suppression of wildfires when necessary, which would protect native vegetation and ACECs over the long term.

Vegetation improvement actions, such as noxious weed control measures, would have impacts similar to those described under Methods and Assumptions at the beginning of this section.

Effects under Alternative A

Minimizing the spread of noxious weeds along roadways would help protect the sensitive plants within the Osgood Mountains ACEC. Transportation actions to minimize effects on wildlife, sensitive species, and habitat would protect and limit disturbance to vegetation and habitat and would prevent noxious weed invasion or spread from road or trail construction. This would protect ACEC values in these areas over the long term.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Travel management includes limiting access into areas by implementing a road and trail closure policy, including rerouting roads and trails to protect ACEC values or reduce adverse impacts on resources. Implementing mitigation measures and weed abatement would reduce the potential for adverse impacts on ACEC values and would prevent noxious weed establishment and spread.

Effects under Alternative D

Alternative D would remove or reroute trails within the ACECs to minimize effects on sensitive plant species habitat, critical wildlife habitat areas, and cultural and scientific areas. Implementation of mitigation measures and weed abatement would reduce the potential for adverse impacts on ACEC values and would prevent noxious weed establishment and spread.

Areas of Critical Environmental Concern: Effects from Lands and Realty Management

Effects Common to All Alternatives

There are no areas identified within ACEC boundaries that would be suitable for disposing of public lands. Developing and implementing mitigation measures would reduce impacts on ACEC values.

Effects under Alternative A

ROWs would be allowed within the Osgood Mountains ACEC subject to implementation of permit stipulations, BMPs, and mitigation measures to protect sensitive plant species. Development could occur in areas with sensitive natural resources, which could diminish the qualities of the resources.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

The Pine Forest ACEC would be designated as an exclusion area, which would help protect special resources from development and disturbance. ROWs would not be allowed in order to protect wildlife habitat values. ROWs would be allowed within the other ACECs, subject to implementation of permit stipulations, BMPs, and mitigation measures to protect ACEC values. Development could occur in areas with sensitive natural resources, which could diminish the qualities of the resources.

Effects under Alternative D

No new communication sites would be allowed in ACECs. This would protect the special qualities of the ACECs from development, operations, and maintenance activities associated with communication sites.

The Pine Forest ACEC would be designated as an avoidance area, which would help protect special resources from development and disturbance by limiting the type of ROWs that would be allowed on a case-by-case basis. ROWs would be allowed within the other ACECs, subject to implementation of permit stipulations, BMPs, and mitigation measures to protect ACEC values.

Development could occur in areas with sensitive natural resources, which could diminish the qualities of the resources.

Areas of Critical Environmental Concern: Effects from ACEC/RNA Management

Effects Common to All Alternatives

ACECs would be managed to protect ACEC values that these areas were nominated for. More intensive implementation of permit stipulations, BMPs, and mitigation measures would be required to protect ACEC values.

Effects under Alternative A

The BLM would continue to maintain the Osgood Mountains ACEC so as to protect the milkvetch. The ACEC would continue to be closed to mineral material disposal (saleables), open to fluid mineral leasing with NSO, open to solid mineral leasing with standard stipulations, and withdrawn from locatable minerals entry. There would be no new impacts.

Effects under Alternative B

The impacts from ACEC designation would be the same as those under Alternative A.

Effects under Alternative C

The BLM would continue to maintain the 60-acre Osgood Mountains ACEC for protection of the milkvetch. There would be no new impacts on the special qualities of the area of the ACEC because the designation would not change. The BLM would also designate the Pine Forest, Raised Bog, and Stillwater ACECs. The special qualities associated with these areas would gain additional protection from disturbances by being designated ACECs.

The ACECs would be managed as follows:

- Closed to mineral material disposal (saleables);
- Closed to fluid mineral leasing;
- Closed to solid mineral leasing;
- Withdrawn from locatable minerals entry.

Closure and withdrawal would protect the special qualities associated with these areas from degradation from activities associated with mineral development.

Effects under Alternative D

The impacts from ACEC designation would be the same as those under Alternative C. Additionally, the Pine Forest, Stillwater, and Raised Bog would be open for acquiring the rights to locatable minerals with special mitigation on operations. Opening the Pine Forest, Stillwater, and Raised Bog ACECs for acquiring the rights to locatable minerals with special mitigation on operations could threaten the special qualities associated with these areas from degradation from activities associated with mineral development. Also, the ACECs would be closed to any new communication sites.

Closure to communication site development would protect the special qualities associated with these areas from degradation from activities associated with communication site development.

Areas of Critical Environmental Concern: Effects from Backcountry Byways Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect ACECs.

Areas of Critical Environmental Concern: Effects from National Historic Trails Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect ACECs.

Areas of Critical Environmental Concern: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

Because none of the NWSRS eligible river segments fall within or adjacent to existing or proposed ACECs, there would be no impacts on ACECs from WSR management under any of the alternatives.

Areas of Critical Environmental Concern: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect ACECs.

Areas of Critical Environmental Concern: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect ACECs.

Areas of Critical Environmental Concern: Effects from Public Health and Safety Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect ACECs.

Areas of Critical Environmental Concern: Effects from Sustainable Development Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect ACECs.

ACECs: Cumulative Effects**Past and Present Actions**

Past and present impacts from management of one ACEC has no known impacts from livestock grazing, mineral, lands and realty, and renewable energy developments, recreation, special status species management, WHB, and wildland fire management.

Reasonably Foreseeable Actions

Impacts from designation of three additional ACECs would have no impacts from livestock grazing, special status species, recreation and WHB management. Minerals, lands and realty, and renewable energy management would be affected as these areas would have use restrictions limiting development. ACECs would be prioritized for fire suppression operations increasing demands and costs for suppression resources.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Incremental effects of mineral and renewable energy management would limit uses and emphasize protection of critical resources within ACECs. Public lands within these designated areas would not be available for certain types of development. The impacts would be dependent on the number of ACECs designated.

4.4.2 Wild and Scenic Rivers***Summary***

In general, Effects Common to All Alternatives involve actions that maintain or improve the qualities of areas with special designations. Analysis in this section considers the effects of resource management on all river segments found to be eligible for NWSRS designation regardless of the determination of their suitability or potential designation status. NWSRS eligible river segments were identified in the WSR report (BLM 2006)..

Methods of Analysis**Methods and Assumptions**

To the extent practical, spatial data were used to compare the proposed management of each alternative to existing conditions. In the absence of quantitative data, potential impacts from each alternative are based on interdisciplinary team knowledge of the resources and the planning area and on information gathered from the public during the planning process. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were assessed according to the following assumptions:

- There would be an increase in BLM management to protect designated WSR segments and segments found to be eligible but have not yet received a decision regarding suitability;
- The proposed management prescribed for an area with a special designation would protect the qualities that are associated with the special designation for the area; and

- Activities proposed that would not initially meet objectives for areas with special designations would be mitigated to the extent needed to meet the objectives.

Wild and Scenic Rivers: Effects from Air Quality Management

Effects Common to All Alternatives

Management actions, which preserve air quality, would generally have a positive effect on habitats along the 43.4 miles of NWSRS eligible streams regardless of their suitability or designation status. Because of the requirement of air quality management to maintain conformance with national standards across all alternatives, the effects under all alternatives would be the same.

Wild and Scenic Rivers: Effects from Geology Management

Effects Common to All Alternatives

There would be no impacts because there are no geology management actions that are likely to affect NWSRS eligible river segments.

Wild and Scenic Rivers: Effects from Soil Resources Management

Effects Common to All Alternatives

In general, management actions, which maintain, protect, or improve soils, including seeding and improving vegetative cover, would improve soil, vegetative, and hydrologic processes along NWSRS eligible river segments and would improve ecosystem health over the short term. This would result in long-term benefits from increased vegetative productivity and improved habitat connectivity. All of these effects would help to preserve or enhance identified ORVs along 43.4 miles of NWSRS eligible river segments.

Effects under Alternative A

Under Alternative A, soils management would benefit ecosystems along 43.4 miles of NWSRS eligible river segments by reducing erosion, promoting natural soil movement process and maintaining ORVs.

Effects under Alternative B

Under Alternative B, soils management would benefit ecosystems along 43.4 miles of NWSRS eligible river segments in a manner similar to that described under Alternative A, but to a lesser degree because resource use would be prioritized and protective measures would be less comprehensive.

Effects under Alternative C

Under alternative C, soils management would benefit ecosystems along 43.4 miles of NWSRS eligible river segments in a manner similar to that described in alternative A, but to a greater degree because resource protection would be prioritized and protective measures would be more comprehensive.

Effects under Alternative D

Under Alternative D, soils management would benefit ecosystems along 43.4 miles of NWSRS eligible river segments in a manner similar to that described under Alternative C, but to a lesser degree because while resource protection would be promoted, protective measures would prioritize multiple uses.

Wild and Scenic Rivers: Effects from Water Resources Management

Effects Common to All Alternatives

In general, water resource management goals would improve watershed functions and promote maintenance of water availability for natural processes through adherence to Nevada water law. This would provide protection for or maintenance of the free-flowing condition and identified ORVs along the 43.4 miles of NWSRS eligible river segments.

Effects under Alternative A

Under Alternative A, water resource management, specifically management for healthy watersheds, would benefit habitat functionality along 43.4 miles of NWSRS eligible river segments. Because there are few specific actions defined under Alternative A, projects related to management of healthy watersheds could vary greatly and lead to varying degrees of benefit to eligible river segments.

Effects under Alternative B

Under Alternative B, water resource management, specifically management for healthy watersheds, would benefit habitat functionality along 43.4 miles of NWSRS eligible river segments. However, because of the emphasis on resource use, actions would allow for greater use of ground and surface waters for economic benefit. While the Nevada Division of Water Resources manages water rights and is directed to ensure availability of water for wildlife that is accustomed to using it. However, limits in implementation can result in over-appropriation of water. This may lead to degradation of the free flowing nature or ORVs of eligible segments despite activities to improve the watershed at a larger scale.

Effects under Alternative C

Under Alternative C, water resource management would benefit habitat functionality along 43.4 miles of NWSRS eligible river segments. Because resource protection is emphasized, actions under Alternative C would provide for the greatest amount of maintenance or improvement of the free flowing condition and ORVs identified along eligible streams.

Effects under Alternative D

Under Alternative D, water resource management would benefit ecosystems along 43.4 miles of NWSRS eligible in a manner similar to that described under Alternative C, but to a greater degree because Alternative D provides specific actions related to the management and protection of priority watersheds.

Wild and Scenic Rivers: Effects from Vegetation – Forest/Woodland Products Management***Effects Common to All Alternatives***

Under all alternatives, BMPs, SOPs, and management actions would generally promote sustainable and non-destructive use of forest/woodland products. Therefore, effects on NWSRS eligible streams from use of the 1,304 acres of forest/woodland habitat within the eligible corridors would have a minor impact on the habitat functionality of eligible streams. Use activities and alteration of the visible landscape, as seen from eligible river segments, could potentially alter the scenic ORVs identified in the WSR inventory.

Wild and Scenic Rivers: Effects from Vegetation — Invasive and Noxious Species Management***Effects Common to All Alternatives***

In general, actions to decrease invasive and noxious species on BLM-administered lands as described under all alternatives would improve ecosystem health and habitat values along 43.4 miles of NWSR eligible river segments by increasing native species in both the short term and long term. Implementation of weed control actions (human activities, removal of vegetation, use of herbicides, etc.) may cause short-term detrimental effects on scenic and fish ORVs identified in the WSR report, while having a longer term benefit.

Wild and Scenic Rivers: Effects from Chemical and Biological Control***Effects Common to All Alternatives***

Effects on NWSRS eligible stream segments from chemical and biological control would be the same as those described under Vegetation – Invasive and Noxious Weed Management.

Wild and Scenic Rivers: Effects from Vegetation – Rangeland Management***Effects Common to All Alternatives***

Emergency stabilization and rehabilitation actions under all alternatives would have a beneficial effect on NWSRS eligible river segments. Temporary removal of grazing and implementation of seeding, planting, and erosion mitigation projects would benefit the natural processes along eligible segments.

Effects under Alternative A

Under Alternative A, no effects on NWSRS eligible river segments are expected from rangeland vegetation management. All segments possessed the free flowing nature and ORVs needed to be considered eligible under current management. If any effects were to occur, they would likely be beneficial to the eligible river segments from continued improvement in grazing management practices.

Effects under Alternative B

NWSRS eligible river segments would likely benefit from rangeland vegetation management under Alternative B. Restoration or improvement of degraded rangelands would likely indirectly improve wetland and riparian habitats, through altered grazing management and from projects which decrease erosion in uplands.

Effects under Alternative C

Option 1

Under Alternative C, Option 1, effects on NWSRS eligible river segments would be the same as those described under Alternative B.

Option 2

Under Alternative C, Option 2, no livestock grazing would occur along NWSRS eligible river segments. This would minimize pressure from non-native species on eligible segments of Washburn Creek and Crowley Creek. The eligible segment North Fork of the Little Humboldt River would still be subject to use by WHB. In all cases, removal of this pressure from grazing would allow for natural processes to maintain or improve habitats and ORVs at a greater rate than under conditions with livestock use. Under these conditions, however, fuel loads may increase and lead to more severe fires. While these habitats are adapted to wildfire, severe fire could allow for greater encroachment of more aggressive non-native or noxious species.

Effects under Alternative D

Under Alternative D, effects on NWSRS eligible river segments would be the same as those described under Alternative B.

Wild and Scenic Rivers: Effects from Vegetation – Riparian and Wetlands Management

Effects Common to All Alternatives

In general, management for the health and functionality of riparian habitats, both in and upstream of NWSRS eligible river segments, would maintain and improve the free flowing nature and ORVs identified in the WSR report. While the target percentage of riparian areas meeting PFC varies among alternatives, all eligible segments are currently at a high level of functionality (either properly function or exhibiting an upward trend in functionality), and actions related to riparian and wetland management is not expected to cause degradation in these systems.

Wild and Scenic Rivers: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

In general, fish and wildlife habitat management actions under all alternatives, particularly maintenance and improvement of lentic and lotic fish habitat, would benefit the free flowing condition and ORVs identified on NWSRS eligible river segments. Implementing BMPs and SOPs would reduce adverse impacts on fish and wildlife habitat areas within WSR corridors.

Effects under Alternative A

There would be no impacts on NWSRS eligible river segments in addition to those discussed above, under Effects Common to All Alternatives..

Effects under Alternative B

Under Alternative B, specific management actions related to limitation of permitted activities are described based on designation of certain areas as priority habitat. Although the defined areas or priority classification (Priority 1 or Priority 2) vary among alternatives, all NWSRS eligible river segments fall within some degree of priority habitat under all alternatives. This would provide measures that would indirectly protect free flowing conditions and ORVs through limitation on other land uses. These protections would be greater than those available under Alternative A.

Effects under Alternative C

Impacts would be the same as those under Alternative B.

Effects under Alternative D

Impacts would be the same as those under Alternative B.

Wild and Scenic Rivers: Effects from Special Status Species Management

Effects Common to All Alternatives

Under all alternatives, management actions would maintain or improve the habitat of special status species while preventing land uses, which would lead to the listing of any species. Because the NWSRS eligible segments of Washburn Creek and Crowley Creek contain an ORV related specifically to Lahontan cutthroat trout, these segments would benefit under all alternatives. The eligible segment of the North Fork of the Little Humboldt River was described as having “unique cliff vegetation with a number of unusual endemic and sensitive plant species” (BLM 2006a). Management for the protection of these species would lead to additional protection of this segment as well under all alternatives.

Wild and Scenic Rivers: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Because the NWSRS eligible segments of Washburn Creek and Crowley Creek do not fall within HAs or HMAs, there would be no effects from WHB management. The eligible segment of the North Fork of the Humboldt River falls within the Little Owyhee HMA. While there is some variation in management among alternatives, none of the variations would lead to measurably different effects on this segment. Managing WHB within the Little Owyhee HMA would include controlling WHB populations based on AML. Controlling herd size would limit and reduce the potential for overgrazing areas. Population control measures would reduce the impact of WHB on lands by decreasing the risk of soil compaction, trampling, and the introduction or spread of weeds. This would help maintain ecosystem health and ORVs.

Wild and Scenic Rivers: Effects from Wildland Fire Management***Effects Common to All Alternatives***

Under all alternatives, mitigation measures, BMPs, and SOPs to prevent impacts on wetland and riparian habitats, would be implemented during fire suppression and fuels management activities. Use of retardant would be restricted within stream segments, protecting water quality. These restrictions would be implemented on all surface waters including NWSRS eligible streams. In general, these actions would protect the habitats that provide NWSRS eligible segment ORVs. Conversely, limitation of fuels management and suppression activities can lead to increases in fuel loads. Therefore, fires that do impact NWSRS eligible segments could be larger or more severe.

Wild and Scenic Rivers: Effects from Cultural Resources Management***Effects Common to All Alternatives***

Under all alternatives, protective management would be implemented in accordance with state and federal laws to identify and/or preserve culturally sensitive sites. Due to the character of the landscape within the planning area and the scarcity and importance of water, many cultural sites are located adjacent to perennial waters. The WSR report (BLM 2006a) specifically identifies certain cultural resources found within the NWSRS eligible corridor of the North Fork of the Humboldt River. It is highly likely that the eligible segments of Washburn Creek and Crowley Creek would also contain culturally sensitive resources. Because of this, all NWSRS segments would be afforded additional protections due to cultural resource management which would help preserve identified ORVs.

Wild and Scenic Rivers: Effects from Tribal Consultation***Effects Common to All Alternatives***

Consulting with tribes to identify culturally significant plants, important habitats, and traditional use locations would emphasize protection of natural resources. This could limit the location of ground disturbance and other uses and maintain and improve values over the long term in certain areas. Therefore, tribal consultation could help preserve identified ORVs within NWSRS eligible corridors under all alternatives.

Wild and Scenic Rivers: Effects from Paleontological Resources Management***Effects Common to All Alternatives***

Because there are no documented paleontological resources identified within any of the NWSRS eligible corridors, effects on NWSRS eligible segments are not expected from paleontological resource management. If any paleontological resources were to be identified, management would provide for additional land use restrictions in the vicinity, leading to increased protection of a portion of the habitat that provides identified ORVs.

Wild and Scenic Rivers: Effects from Visual Resources Management

Effects Common to All Alternatives

Under all alternatives, the NWSRS eligible corridor of the North Fork of the Humboldt River would be managed as VRM Class I, wherein management to preserve the existing character of the landscape would restrict any use which would attract attention. This would preserve the scenic ORVs identified along this eligible segment.

Effects under Alternative A

Under Alternative A, the NWSRS eligible segments of Washburn Creek and Crowley Creek would be managed as VRM Class IV, wherein management would allow for major modification to the existing character of the landscape. This would provide little or no protections for the scenic ORVs identified along these segments.

Effects under Alternative B

Under Alternative B, the NWSRS eligible segments of Washburn Creek and Crowley Creek would be managed as VRM Class III, wherein management would allow a moderate level of change in order to partially retain the existing character of the landscape. This would allow modifications that may impact the scenic ORVs identified but would impose more protective measures than under Alternative A.

Effects under Alternative C

Under Alternative C, the NWSRS eligible segments of Washburn Creek and Crowley Creek would be managed as VRM Class II, wherein management would allow a low level of change in order to retain the existing character of the landscape. Uses and facilities within WSR corridors would be managed to blend with the surrounding landscapes. Changes may subordinate the character of the setting but must reflect what could be a natural occurrence. More mitigation measures would be implemented so that activities or structures would have fewer scenic impacts and would maintain the visual character of the outstanding remarkable values. Under these alternatives, the scenic ORVs of these eligible segments would be conserved.

Effects under Alternative D

Impacts would be the same as those under Alternative C.

Wild and Scenic Rivers: Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

Because there are no documented cave or karst resources within the NWSRS eligible corridors, management of these resources are not expected to have an effect on the ORVs of eligible segments. If any cave or karst resources were to be identified, management would likely provide for additional land use restrictions in the vicinity, leading to increased protection of a portion of the habitat that provides identified ORVs. .

Wild and Scenic Rivers: Effects from Livestock Grazing Management

Effects Common to All Alternatives

There would be no impacts on NWSRS eligible river segments from livestock grazing management that would be common to all alternatives.

Effects under Alternative A

In general, livestock grazing leads to use of riparian habitats. All alternatives, except Alternative C, Option 2, would allow livestock grazing within the NWSRS eligible corridors. Livestock grazing itself can have detrimental impacts on wetland and riparian habitats when improperly managed. Improperly managed livestock grazing can lead to stream bank alteration, water quality degradation, erosion, loss of vegetative health, and increases in non-native or upland vegetation. These effects, however, would be negated or minimized due to management goals and objectives related to livestock grazing under all alternatives, which reflect a need for environmentally sustainable management practices while providing for some degree of economic sustainability. Specific management goals related to riparian habitat functionality are addressed under the Effects from Vegetation – Riparian and Wetlands Management section. The implementation of riparian and wetland management actions could have impacts on how grazing management actions are implemented, ultimately leading to a greater degree of habitat functionality throughout the planning area. Livestock grazing management, where appropriate, can also assist in decreasing fuel loads which can lead to less severe fires. Overall, management of livestock would likely lead to the preservation of the ORVs, which were present and identified in 2006 along eligible segments.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Option 1

Impacts would be the same as those under Alternative A.

Option 2

By preventing livestock use, impacts on vegetation and soils from grazing would not occur and could improve outstanding remarkable values in the short term. Long-term buildup of fuels may make areas within WSR corridors more vulnerable to wildland fire.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Wild and Scenic Rivers: Effects from Minerals Management

Effects Common to All Alternatives

There would be no effects on WSR from minerals management that would be common to all alternatives.

Effects under Alternative A

WSRs

Under Alternative A, there would be no mineral management actions specifically related to NWSRS eligible river segments. Impacts on ORVs could result from fluid, leasable, and locatable mineral development and mineral material sales or disposal. Impacts associated with these actions include increased human presence, machinery, noise, loss or injury to plants and soils from excavation or trampling, disturbance from mineral extraction, and increased exposure to dust and other contaminants associated with construction of facilities necessary for mineral development and use of access roads. Any protections for NWSRS eligible corridors would be achieved through objectives, goals, and actions related to other actions.

RFDs

A reasonably foreseeable development scenario was developed with respect to future oil and gas and geothermal leasing (see Mineral Assessment Report, May 2006 [BLM 2006a] updated in 2011, see Appendix I). Future actions based on reasonable development could result in indirect impacts. Future exploration and development scenarios could involve new structures, roads, infrastructure, and operations. These new structures, roads, and operations would not be located within the Osgood Mountains ACEC due to no surface occupancy stipulations.

Effects under Alternative B

Under Alternative B, Effects on WSR from minerals management would be the same as under Alternative A.

Effects under Alternative C

Under Alternative C, in accordance with BLM Manual 8351, NWSRS eligible corridors classified as wild would be closed to new mining claims or mineral leases (valid existing rights would not be altered). Among the three eligible river segments tentatively classified as wild, there is a total of approximately 8,634 acres. The remaining 6,542 acres of eligible corridor are tentatively classified as scenic and would have no specific closures to mineral activities, although management would be implemented to minimize the impacts of mineral development activities. These measures would be in place to preserve the ORVs identified along eligible streams.

Effects under Alternative D

Under Alternative D, Effects on WSR from minerals management would be the same as under Alternative A.

Wild and Scenic Rivers: Effects from Recreation, Visitor Outreach, and Services Management***Effects Common to All Alternatives***

Goals, objectives, and actions related to recreation, visitor outreach, and service would generally seek to improve the capability of the public to observe, interact in, and appreciate natural resources while protecting those natural resources. It is assumed that any future increases in recreation, visitation, or services would be related to the ORVs identified along the NWSRS eligible river segments. Therefore, these ORVs would be specifically protected to improve the quality of the recreation/visitation experience.

Effects under Alternative A

There would be no impacts on WSRs from recreation management because there would be no tentatively eligible, suitable streams under this alternative.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

In addition to the general protections provided under all alternatives, Alternative C includes some specific provisions, which would further preserve the ORVs identified along eligible segments. WSR segments would be designated as limited to OHV use. This would afford greater protection of the outstanding remarkable values by limiting OHVs and associated dust. To minimize impacts caused by OHV use, the BLM would limit OHV use of existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. Alternative C would also prevent the creation of new roads related to recreation, visitation, and services. This would reduce the potential for increased sedimentation or pollution at NWSRS eligible segments while also preserving the scenic values identified at these sites.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Wild and Scenic Rivers: Effects from Renewable Energy Management***Effects Common to All Alternatives***

Because there is virtually no chance of renewable energy projects being initiated along NWSRS eligible river segments and because construction activities within eligible NWSRS eligible corridors are limited through management of other resources, there are not expected to be any impacts on eligible segments from renewable energy management.

Wild and Scenic Rivers: Effects from Transportation and Access Management***Effects Common to All Alternatives***

Under all alternatives, NWSRS eligible river segments would generally benefit from transportation and access management. Maintenance of roads would help reduce or prevent erosion from these surfaces. Maintenance of roads would also promote efficient suppression of wildfires when necessary, which would protect native vegetation and WSR corridors over the long term. Management actions related to seasonal closures, road reroutes, or closing of roads for the maintenance of wildlife habitat would also benefit the overall ORVs identified along eligible segments.

Wild and Scenic Rivers: Effects from Lands and Realty Management***Effects Common to All Alternatives***

There would be no impacts on WSR from lands and realty management that would be common to all alternatives.

Effects under Alternative A

There would be no impacts on NWSRS eligible river segments from lands and realty management because no lands and realty action are proposed within NWSRS eligible corridors.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Under Alternative C, up to 13,583 acres would be withdrawn from lands open to minerals activities. This would prevent degradation of ORVs within the eligible corridors due to minerals related activities, subject to valid existing rights. Otherwise, effects would be the same as those described under Alternative A.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Wild and Scenic Rivers: Effects from ACEC/RNA Management***Effects Common to All Alternatives***

There are no existing or proposed ACECs or RNAs within the NWSRS eligible corridors, so there would be no impacts on eligible river segments from the management of these areas.

Wild and Scenic Rivers: Effects from Backcountry Byways Management***Effects Common to All Alternatives***

There would be no impacts because there are no actions that are likely to affect WSRs.

Wild and Scenic Rivers: Effects from National Historic Trails Management

Effects Common to All Alternatives

There would be no impacts on WSR from management of national historic trails because there are no actions that are likely to affect WSRs.

Wild and Scenic Rivers: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There are no effects common to all alternatives.

Effects under Alternative A

ORVs identified along NWSRS eligible river segments as described in the WSR report (BLM 2006a) would be preserved through the implementation of interim protective management as defined in that report.

Effects under Alternative B

According to a finding of non-suitability of NWSRS eligible river segments, management of WSRs would have no impact on these segments. Any protection of eligible segments would occur according to goals, objectives, and management actions related to other resources (wildlife, riparian, water quality, etc.).

Effects under Alternative C

According to a determination of suitability, the BLM would protect eligible river segments in accordance with tentative suitability classifications for the North Fork of the Little Humboldt, Washburn Creek, and Crowley Creek. This would protect the ORVs of eligible river segments identified in the WSR report (BLM 2006a).

Effects under Alternative D

According to a finding of non-suitability of NWSRS eligible river segments, management of WSRs would have no impact on these segments. Any protection of eligible segments would occur according to goals, objectives, and management actions related to other resources (wildlife, riparian, water quality, etc.). Alternative D would provide greater protections off eligible segments than Alternative B due to the additional protections afforded to Priority Habitats.

Wild and Scenic Rivers: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

Because the NWSRS eligible river segments of Washburn Creek and Crowley Creek do not fall within existing or proposed wilderness study areas, management specific to these areas would have no impact on these segments. Additionally, both of these segments are currently in close proximity to and crossed by unimproved roads. Therefore, it is unlikely that they would be found to be

considered lands with wilderness characteristics. The eligible segment of the North Fork of the Humboldt River falls completely within the North Fork of the Humboldt River WSA. Therefore, this segment would be afforded additional protections which would protect ORVs identified in the WSR report (BLM 2006a) regardless of the segments determination of suitability or designation status.

Wild and Scenic Rivers: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There would be no impacts on WSR from watchable wildlife viewing sites management because there are no actions that are likely to affect WSRs.

Wild and Scenic Rivers: Effects from Public Health and Safety Management

Effects Common to All Alternatives

There would be no impacts on WSR from public health and safety management because there are no actions that are likely to affect WSRs.

Wild and Scenic Rivers: Effects from Sustainable Development Management

Effects Common to All Alternatives

There would be no impacts on WSR from sustainable development management because there are no actions that are likely to affect WSRs.

Wild and Scenic Rivers: Cumulative Effects

Past and Present Actions

Past actions and events contributing to cumulative effects within or adjacent to rivers have resulted primarily from surface-disturbing activities and population growth.

Use of natural resources within the WD planning area is expected to remain at current or slightly increased levels. As a result, surface-disturbing activities affecting rivers could continue. However, the BLM would maintain discretionary authority over most land uses and would permit only those actions that would not impair or conflict with river systems, reducing cumulative effects on these areas. As the population increases, activity and use within or adjacent to rivers increases. An increasing population could continue to build housing closer to rivers, thereby affecting the quality of natural and cultural resources near rivers.

Because none of the evaluated segments are suitable under the Wild and Scenic River Act, there are no RFFAs or incremental impacts.

4.4.3 Backcountry Byways

Summary

In general, the effects common to all alternatives involve actions that maintain or improve the qualities of BCBs. Specific actions to achieve this are associated with the management of rangeland

vegetation, WHB, wildland fire, cultural resources, visual resources, livestock grazing, minerals, recreation and visitor outreach and services, renewable energy, transportation and access, lands and realty, and backcountry byways. In general, any actions that would change the visual or aesthetic character of the landscape surrounding the BCB would have impacts on the quality of the BCB.

Under Alternative A, the BLM would continue to rely on dated management framework plans to manage the Lovelock Cave BCB. Designation of new BCBs would be considered. An increasing population and increasing demand for recreation opportunities threaten the landscape surrounding the Lovelock Cave BCB and other potential BCBs because the management framework plans lack management actions for these areas.

In absolute terms, Alternatives C and D would have similar impacts on BCBs, with some exceptions. Alternative C would provide additional protection to the landscape surrounding existing and potential BCBs because it would protect the areas from livestock damage, such as trampled vegetation. Compared to Alternatives C and D, Alternative B would provide less than half of the opportunities for protecting the special resources associated with BCBs.

In relative terms, Alternatives B, C, and D differ in their degree of impact on existing and potential BCBs. The differences in degree of impact on BCBs are detailed below under each alternative.

Methods of Analysis

Methods and Assumptions

To the extent practical, spatial data were used to compare the proposed management of each alternative to existing conditions. In absence of quantitative data, potential impacts from each alternative are based on interdisciplinary team knowledge of the resources and the planning area and on information gathered from the public during the planning process. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were assessed according to the following assumptions:

- The scenic value of BCBs is directly related to the aesthetic and visual character of the landscape surrounding the byways;
- There would be an increase in use of BLM-administered land;
- The proposed management prescribed for a BCB would protect the qualities that are associated with the BCB;
- Any new surface-disturbing activities would be subject to NEPA conformance; and
- Activities proposed that would not initially meet objectives for BCBs would be mitigated to the extent needed to meet the objectives.

Backcountry Byways: Effects from Air Quality Management

Effects Common to All Alternatives

There would be no impacts because there are no air quality management actions that are likely to affect BCBs.

Backcountry Byways: Effects from Geology Management***Effects Common to All Alternatives***

There would be no impacts because there are no geology management actions that are likely to affect BCBs.

Backcountry Byways: Effects from Soil Resources Management***Effects Common to All Alternatives***

There would be no impacts because there are no soil resources management actions that are likely to affect BCBs.

Backcountry Byways: Effects from Water Resources Management***Effects Common to All Alternatives***

There would be no impacts because there are no water resources management actions that are likely to affect BCBs.

Backcountry Byways: Effects from Vegetation—Forest/Woodland Products Management***Effects Common to All Alternatives***

There would be no impacts because there are no forest vegetation management actions that are likely to affect BCBs.

Backcountry Byways: Effects from Vegetation—Invasive and Noxious Species Management***Effects Common to All Alternatives***

The BLM would continue to minimize the spread of weeds so that native vegetation could thrive. This would promote a visual landscape with flora that is typical of the Great Basin and would improve the aesthetic value of BCBs throughout the WD.

Backcountry Byways: Effects from Chemical and Biological Control***Effects Common to All Alternatives***

There would be no impacts because there are no chemical and biological control actions that are likely to affect BCBs.

Backcountry Byways: Effects from Vegetation—Rangeland Management***Effects Common to All Alternatives***

Vegetation treatments for range improvement projects would increase native rangeland vegetation throughout the WD in the long term. These range improvements would result in minor and short-term disturbances to vegetation, including loss of vegetation cover and changes in plant composition adjacent to each project. Therefore, these range improvement projects would have a short-term

impact on the visual character of the landscape surrounding BCBs but would improve the scenic values in the long term.

Post-fire rehabilitation efforts, including seeding and grazing restriction, would reduce the ability for weeds to invade and would support native species growth. This would help to achieve healthy rangeland conditions in the long term and would improve scenic values in the landscape surrounding BCBs.

Effects under Alternative A

Grazing management systems and practices would decrease fuel loads and would reduce the likelihood of catastrophic fire over large areas. Prescriptive grazing would be used, and if applied correctly, this could increase native vegetative cover and decrease weeds on rangelands, which would help to restore a natural fire regime. Such protections against catastrophic fire would preserve the scenic value of BCBs throughout the WD in the long term.

Effects under Alternative B

Grazing management systems and practices would have impacts similar to those described under Alternative A. Impacts would be greater by restoring FRCC to Class 2 levels on 70,000 acres, which would reduce fuel loads on these lands and would protect native vegetation from catastrophic fire.

Effects under Alternative C

Option 1

Grazing management systems and practices would have impacts similar to those described under Alternative A. Restoring FRCC to Class 2 levels on 70,000 acres would have impacts similar to those described under Alternative B.

Option 2

Grazing would not be permitted under this option, which could make rangelands more susceptible to catastrophic fire because fuel loads would not be decreased through grazing. Large-scale catastrophic fire would lower the scenic value of adjacent BCBs. However, the impacts from restoring FRCC to Class 2 levels on 70,000 acres would be similar to those described under Alternative B.

Effects under Alternative D

The impacts from grazing management systems and practices would be similar to those described under Alternative A. Restoring FRCC to Class 2 levels would have impacts similar to those described under Alternative B.

Backcountry Byways: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

There would be no impacts because there are no riparian and wetland management actions that are likely to affect BCBs.

Backcountry Byways: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

The BLM would continue to apply land health standards, SOPs, BMPs, use restrictions, or mitigation measures to all BLM and BLM-authorized activities to maintain and improve wildlife habitat. This would promote a visual landscape with fauna that is typical of the Great Basin, which would improve the scenic quality of BCBs throughout the WD.

Backcountry Byways: Effects from Special Status Species Management

Effects Common to All Alternatives

There would be no impacts because there are no special status species management actions that are likely to affect BCBs.

Backcountry Byways: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

WHB management actions would impact vegetation because WHB may overuse vegetation adjacent to water sources, troughs, and livestock reservoirs, which results in a loss of plant cover. This would allow localized areas to become dominated by invasive plants. Vegetation recovery on a burned area could be slowed or reduced by WHB. All of these effects could impact BCBs by lowering the scenic value of the surrounding landscape.

The presence of WHB on the land would improve the scenic value of BCBs.

Effects under Alternative A

WHB population control measures would be greatest under this alternative, and AML would be converted between wild horse use and burro use. Conversion of AML would spread impacts on rangelands through time, as WHB have different habitat and forage preferences. These actions would lower the impact of WHB on the landscape, and the scenic value of BCBs would be improved within HMAs.

Effects under Alternative B

Impacts from population control measures under Alternative B would be similar to those under Alternative A. However, under Alternative B, AML would not be converted between wild horse use and burro use, which would impact rangeland health by concentrating WHB impacts, such as compaction, trampling, and weed spread within the HMAs. This would lower the scenic value of BCBs where they occur in HMAs.

Effects under Alternative C

Alternative C would implement the fewest controls on WHB populations, which would cause the greatest impact from WHB on rangelands and would lower the scenic value of BCBs. Impacts from conversion of AML between wild horse use and burro use would be similar to those described under Alternative A.

Effects under Alternative D

Impacts from population control measures and conversion of AML between wild horse use and burro use would be similar to those described under Alternative A.

Backcountry Byways: Effects from Wildland Fire Management

Effects Common to All Alternatives

There would be no impacts because there are no wildland fire management actions common to all alternatives that are likely to affect BCBs.

Effects under Alternative A

Alternative A does not identify areas for allowing conditional fire suppression management for a benefit. There would continue to be no requirements for the BLM to use wildland fire to provide resource benefits. Consequently, the impacts on visual resources identified under Alternative B would not occur.

Effects under Alternative B

The BLM would designate 110,167 acres suitable for allowing conditional fire suppression management for a benefit in order to provide resource benefits. Using wildland fire to provide resource benefits assumedly would promote healthy habitat native to the Great Basin. Consequently, allowing conditional fire suppression management for a benefit would promote a landscape with flora that is typical of the Great Basin, which would improve the scenic value of BCBs throughout the WD in the long term. However, after an area had been burned, there would be short-term impacts on the landscape, including scorched terrain and vegetation, until native vegetation recolonized burned areas.

Effects under Alternative C

The impacts on BCBs from wildland fire management would be the same as those under Alternative A.

Effects under Alternative D

The BLM would designate 110,167 acres suitable for allowing conditional fire suppression management for a benefit in order to provide resource benefits. Impacts would be similar to those described under Alternative B.

Backcountry Byways: Effects from Cultural Resources Management

Effects Common to All Alternatives

There would be no impacts because there are no cultural resource management actions common to all alternatives that are likely to affect BCBs.

Effects under Alternative A

Alternative A does not specify a VRM class for the viewshed of the Lovelock Cave BCB. As a result, activities could occur in the viewshed that could alter the scenic landscape along the Lovelock Cave BCB.

Effects under Alternative B

The BLM would protect the viewshed of the Lovelock Cave BCB by managing the viewshed to VRM III. As a result, there would be greater protection of the scenic landscape along the Lovelock Cave BCB because there are currently no standards against which to manage the scenic landscape. Proponents of actions in the viewshed would be required to partially retain the landscape character.

Effects under Alternative C

The BLM would protect the viewshed of the Lovelock Cave BCB by managing the viewshed to VRM II. As a result, there would be greater protection of the scenic landscape along the Lovelock Cave BCB because there are currently no standards against which to manage activities that alter the scenic landscape. Proponents of actions in the viewshed would be required to retain the landscape character, which is a higher standard than partially retaining the landscape character.

Effects under Alternative D

The impacts on visual resources with respect to the Lovelock Cave BCB would be the same as those under Alternative C.

Backcountry Byways: Effects from Tribal Consultation

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect BCBs.

Backcountry Byways: Effects from Paleontological Resources Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect BCBs.

Backcountry Byways: Effects from Visual Resources Management

Effects Common to All Alternatives

Implementing VRM guidelines would maintain the visual character of the landscape in certain areas, which would increase the scenic value of BCBs in these areas.

Effects under Alternative A

Under Alternative A, 420,271 acres and 346,302 acres would be managed to VRM Class I and II guidelines, respectively. These actions would improve the scenic value of BCBs in these areas.

Effects under Alternative B

Under Alternative B, 417,605 acres and 391,203 acres would be managed to VRM Class I and II guidelines, respectively. This alternative is the least restrictive to changes in the visual character of the landscape. Impacts would be similar to those described under Alternative A.

Effects under Alternative C

Under Alternative C, 417,605 acres and 3,083,211 acres would be managed to VRM Class I and II guidelines, respectively. This alternative is the most restrictive to changes in the visual character of the landscape. Impacts would be similar, although greater in magnitude, than under Alternative A.

Effects under Alternative D

Under Alternative D, 417,605 acres and 2,780,416 acres would be managed to VRM Class I and II guidelines, respectively. Impacts would be most similar in nature and magnitude to Alternative C.

Backcountry Byways: Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect BCBs.

Backcountry Byways: Effects from Livestock Grazing Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from livestock grazing management.

Effects under Alternative A

Impacts from livestock grazing are usually related to a long duration of use during the growing season, resulting in lower vigor of desired species and a change in species composition. Often, the vegetation is disturbed around salting areas, bed grounds, troughs, and stock reservoirs, and there is a loss of plant cover, which usually results in localized areas dominated by invasive plants. Further, degraded rangeland that is grazed yearly lacks substantial native vegetation to outcompete invaders. This affects the visual character of the landscape surrounding BCBs and reduces the byways' scenic values.

Livestock grazing would be open on 8,232,727 acres of land under this alternative, which would have the greatest impact on the visual character of the landscape and thus on BCBs. Impacts could occur as described above, but actions under Alternative A must maintain and improve rangeland in accordance with the Standards for Rangeland Health, which would minimize impacts on the landscape and on BCBs. Range improvement actions would help increase native vegetation and decrease the number and extent of weed populations, which would improve the visual character of the landscape in the long term. These actions would be difficult to implement successfully and efficiently under Alternative A, due to the large acreage that would be open to grazing.

Lands closed to grazing on the remainder of land in the WD would lower impacts on the landscape in these areas. This would have a beneficial impact on the scenic value of BCBs.

Effects under Alternative B

Livestock grazing would be open on 8,232,727 acres of land under this alternative. Grazing, including that on acquired lands, allowing temporary nonrenewable use, and allowing for continuous season-long use, would facilitate the most intensive land use. Impacts would be similar to those described under Alternative A.

Range improvement actions and lands closed to grazing on the remainder of land in the WD would have impacts similar to those described under Alternative A.

Effects under Alternative C

Option 1

Livestock grazing would be open on 8,038,084 acres of land under this alternative. Grazing would have impacts similar to those described under Alternative A. However, Alternative C, Option 1 would not allow grazing on acquired lands or temporary nonrenewable use and would only allow for two years of consecutive grazing during the critical growth period. This would minimize the intensity of land use and would foster rangeland health, thus improving the visual character of the landscape and the scenic value of BCBs.

Range improvement actions and lands closed to grazing on the remainder of land in the WD would have impacts similar to those described under Alternative A.

Option 2

Livestock grazing would be closed on all lands within the WD, so this alternative would be the most effective at reducing impacts on the landscape and thus on BCBs.

Effects under Alternative D

Alternative D would have 8,016,754 acres of land open to grazing. Impacts would be similar to those described under Alternative A, except with fewer acres of land open to grazing.

Impacts from range improvements would be similar to those described under Alternative A.

Backcountry Byways: Effects from Minerals Management

Effects Common to All Alternatives

General

Minerals management impacts on BCBs could occur from disturbances that would affect the aesthetic character of the landscape surrounding the BCB. This includes surface disturbance, as well as disturbances from noise and movement from the exploration, construction, and operation of facilities and roads.

Saleable

Impacts from saleable minerals, typically gravel, tend to be small scale and localized. Impacts occur primarily from surface disturbance, but use restrictions and closures would minimize many impacts on the visual character of the landscape, which would minimize impacts on BCBs.

Fluid and Solid

Impacts from fluid and solid leasables are also typically small scale and localized, but cumulative effects can occur where there are numerous oil and gas wells over the landscape. Impacts within the WD would be minimized by use restrictions and closures, which would minimize impacts on the scenic value of BCBs.

Locatable

Development of locatable mineral resources results in surface clearing performed for exploration. Reclamation of disturbed areas using proper seed mix can help mitigate the alteration of the visual character of the landscape, which would minimize impacts on the scenic value of BCBs as well.

RFDs

Future actions based on reasonable development could result in indirect impacts. Future exploration and development could involve new structures, roads, and operations. These new structures, roads, and operations could be in areas where people live and work, where frequent recreation occurs, or where minimal nearby development exists.

Effects under Alternative A

Alternative A would open the greatest acreage and would close the least acreage to mineral development, thus having the greatest likelihood of impacting the visual character of the landscape and thus the scenic values of BCBs. Impacts would be similar to those described under Effects Common to All Alternatives from Minerals Management.

Effects under Alternative B

Compared with Alternative A, Alternative B would open fewer acres and would close more acres to mineral development, thus having less likelihood of impacting the scenic value of BCBs. Impacts would be similar to those described under Effects Common to All Alternatives from Minerals Management.

Effects under Alternative C

Alternative C would open the fewest acres and would close the most acres to mineral development, thus having the least likelihood of impacting the scenic value of BCBs of all alternatives. Impacts would be similar to those described under Effects Common to All Alternatives from Minerals Management.

Effects under Alternative D

Compared with Alternatives A and B, Alternative D would open fewer acres and would close more acres to mineral development, thus having less likelihood of impacting the scenic value of BCBs. Impacts would be similar to those described under Effects Common to All Alternatives from Minerals Management.

Backcountry Byways: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

The BLM would continue to construct appropriate new facilities so as to be unobtrusive with local landscape settings. This would allow the public to use facilities during recreation that blend in with the surrounding landscape, which would minimize the impacts on the scenic value of BCBs.

Effects under Alternative A

There would be no change in the designation of BLM-administered land for OHV use, so there would be no new impacts. Ongoing impacts, such as OHV use in visually sensitive areas, would continue. As a result, OHV use in the landscape surrounding the Lovelock Cave BCB could deteriorate by, for example, scarring the terrain and disturbing vegetation.

Effects under Alternative B

Alternative B would decrease by 5,322,590 the number of acres designated as open for OHV use. As a result, disturbances to the landscape from motorized vehicles would likely decrease in these areas. Limited OHV use on 5,445,218 acres would reduce impacts from OHVs over the landscape. In all, impacts on potential BCBs would be lower than those under Alternative A. To minimize impacts further, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. Impacts on the landscape surround the Lovelock Cave BCB would be similar to those under Alternative A.

Effects under Alternative C

Alternative C would increase the number of acres designated as closed for OHV use and would not allow any acres to be designated as open for OHV use. As a result, disturbances to the landscape from motorized vehicles would likely decrease. To minimize impacts further, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. Alternative C would have the least impact on BCBs of all alternatives.

Effects under Alternative D

Alternative D would increase the number of acres designated as closed for OHV use and would decrease the number of acres designated as open for OHV use compared with Alternative A. As a result, disturbances to the landscape from motorized vehicles would likely decrease. To minimize impacts further, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. This would reduce impacts on the scenic value of BCBs in these areas.

Backcountry Byways: Effects from Renewable Energy Management

Effects Common to All Alternatives

There would be no impacts because there are no renewable energy management actions common to all alternatives that would impact BCBs.

Effects under Alternative A

Maintaining exclusion areas within the WD would protect and limit disturbances to native vegetation and would prevent impacts on the landscape. This would have beneficial impacts on the scenic value of BCBs in these areas.

Effects under Alternative B

Designating avoidance areas within the WD provides some protection to the native vegetation across the landscape. This would have beneficial impacts on the scenic value of BCBs in these areas.

Effects under Alternative C

Designating avoidance areas and exclusion zones within the WD would have the greatest impact on the landscape by protecting and limiting disturbances to vegetation and soils and by preventing noxious weed invasion or spread. This would have the greatest beneficial impacts on the scenic value of BCBs in these areas.

Effects under Alternative D

Designating avoidance areas and exclusion zones within the WD would have impacts similar to those described under Alternative C.

Backcountry Byways: Effects from Transportation and Access Management

Effects Common to All Alternatives

Maintaining roads necessary for fire suppression would provide access to lands throughout the WD and would allow for suppression of wildfires when necessary. This would help protect the landscape from catastrophic fire, which would protect the scenic value of BCBs in the long term.

Effects under Alternative A

Transportation actions under Alternative A would not protect wildlife, sensitive species, or their habitat. As a result, lands throughout the WD could be impacted by road and trail construction through vegetation removal, soil compaction, noxious weed invasion, and increased dust, which would lower the scenic value of BCBs.

Effects under Alternative B

Transportation actions to minimize the effects on wildlife, sensitive species, and habitat would protect and limit disturbance to vegetation and soils and would prevent noxious weed invasion or spread from road or trail construction or transport on vehicles. These actions would thus protect the visual character of the landscape and would improve the scenic value of BCBs.

Effects under Alternative C

Transportation actions to minimize effects on wildlife, sensitive species, and habitat would have impacts similar to those described under Alternative B.

Effects under Alternative D

Transportation actions to minimize effects on wildlife, sensitive species, and habitat would be similar to those described under Alternative B.

Backcountry Byways: Effects from Lands and Realty Management

Effects Common to All Alternatives

ROWs alter the landscape surrounding potential BCBs from their footprint for the facilities that are authorized. This is because they could cause removal of vegetation, soil compaction, noxious weed invasion, and increased dust in these areas. Most of the footprints are localized and cover a small area, but ROWs tend to be linear and may stretch for miles.

Effects under Alternative A

Issuance of ROWs would not be limited, and avoidance areas or exclusion zones for lands and realty management actions would not be designated under Alternative A. This could cause the greatest impact on the visual character of the landscape, thus impacting BCBs.

Effects under Alternative B

The impacts from designating avoidance areas would be similar to those described under renewable energy management actions under Alternative B. The impacts from issuing ROWs would be similar to those described under Alternative A.

Effects under Alternative C

The impacts from designating avoidance areas and exclusion zones would be similar to renewable energy management actions under Alternative C.

Restricting ROW issuance would protect and limit vegetation disturbance, fragmentation, and noxious weed invasion or spread from road construction. Impacts would occur on a landscape scale and would therefore impact the scenic value of BCBs.

Effects under Alternative D

Backcountry Byways: Effects from ACEC/RNA Management

Effects Common to All Alternatives

There would be no impacts because no ACEC/RNA management actions would affect BCBs.

Backcountry Byways: Effects from Backcountry Byways Management

Effects Common to All Alternatives

The BLM would continue to manage and enhance the Lovelock Cave BCB. There would be no new impacts.

Effects under Alternative A

The BLM would continue to evaluate the opportunity and need for developing the Gold Country Byway, Silver BCB, and Blue Lakes-Knott Creek Byway. There would be no new impacts.

Effects under Alternative B

Unlike Alternative A, which could involve the eventual designation of new byways (Gold Country Byway, Silver BCB, and Blue Lakes-Knott Creek Byway), the BLM would not consider new BCBs; therefore, Alternative B would not add to the number of miles of byways.

Effects under Alternative C

The impacts from BCB management would be the same as those under Alternative B.

Effects under Alternative D

The impacts from BCB management would be the same as those under Alternative A.

Backcountry Byways: Effects from National Historic Trails Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect BCBs.

Backcountry Byways: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

Because no existing or proposed BCBs fall within the NWSRS eligible river corridors, there would be no impacts on BCBs from WSR management under any of the alternatives.

Backcountry Byways: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect BCBs.

Backcountry Byways: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect BCBs.

Backcountry Byways: Effects from Public Health and Safety Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect BCBs.

Backcountry Byways: Effects from Sustainable Development Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect BCBs.

Back Country By-Ways: Cumulative Effects

Past and Present Actions

Past, present impacts from management of back country by-ways has had no impacts from livestock grazing, mineral and energy development, special status species management, WHB management, and wildland fire management. Impacts from recreation would include enhancing back country by ways by promoting educational opportunities and information.

Reasonably Foreseeable Actions

There would be no impacts from livestock grazing, mineral and energy development, special status species management, WHB management, and wildland fire management. Recreational experiences would continue to be improved as scenic travel opportunities and educational experiences would be enhanced.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Incremental effects would be limited to recreation improving visitor experiences and educational opportunities. There would be no impacts from other resources and uses defined under past, present, RFFAs.

4.4.4 Wilderness Study Areas and Lands with Wilderness Characteristics

Summary

In general, effects common to all alternatives involve actions that maintain or improve the qualities of WSAs or lands with wilderness characteristics. Specific actions to achieve this are associated with most resources.

Under Alternative A, the BLM would continue to rely on dated management framework plans to manage WSAs or lands with wilderness characteristics. These plans are silent on lands with wilderness characteristics. In addition, an increasing population and increasing demand for recreation opportunities further threaten lands with wilderness characteristics because these public resources lack management actions in the management framework plans.

In absolute terms, Alternatives C and D would have similar impacts on WSAs or lands with wilderness characteristics, with some exceptions. Alternative C, Option 2 would provide additional

protection to WSAs or lands with wilderness characteristics because it would protect the areas from damage by livestock grazing, such as trampled vegetation. Compared to Alternatives C and D, Alternative B would provide fewer opportunities for protecting the special resources associated with these areas.

In relative terms, Alternatives B, C, and D differ in their degree of impact on WSAs or lands with wilderness characteristics. The differences in degree of impact on WSAs or lands with wilderness characteristics are detailed below under each alternative.

Methods of Analysis

Methods and Assumptions

To the extent practical, spatial data were used to compare the proposed management of each alternative to existing conditions. In absence of quantitative data, potential impacts from each alternative are based on interdisciplinary team knowledge of the resources and the planning area, and on information gathered from the public during the planning process. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were assessed according to the following assumptions:

- There would be an increase in use of BLM-administered land;
- The proposed management prescribed for an area designated as a WSA or an area with wilderness characteristics would protect the qualities that are associated with the area;
- Any proposed action within a WSA would be processed in accordance with the policies stated in Manual #6330 Management of Wilderness Study Areas (BLM 2012e) in BLM Handbook H-8550-1; and
- Management actions that include vegetation treatment would indirectly foster wilderness characteristics over the long term by improving ecosystem health and vegetation composition, structure, and diversity. These would be implemented by removing weeds, increasing native vegetation, and managing for a certain plant community composition. Weed removal, in particular, would reduce fuel loads and decrease the risk of catastrophic fire that would destroy vegetation and wilderness characteristics. However, these actions also would directly reduce wilderness characteristics over the short term by increasing human presence, vehicles, road use, and noise. Actions to limit vegetation treatments could prevent ecosystem health improvements in the long term but would minimize disturbance to certain areas in the short term.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Air Quality Management

Effects Common to All Alternatives

Air quality protections would indirectly benefit ecosystems by reducing air pollution that could decrease plant vigor and make plants more susceptible to pest and disease outbreaks. This would foster a healthier ecosystem and would help to protect and preserve the aesthetic and scenic values in WSAs and in areas containing wilderness characteristics. Any impacts would not be new.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative B

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative C

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative D

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Geology Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative B

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative C

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative D

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Soil Resources Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Soil erosion reduction measures, including seeding and improving vegetative cover, would reduce compaction and increase infiltration, indirectly improving ecosystem health over the short term. These impacts could extend into long-term benefits from increased vegetative productivity and improved habitat connectivity. All of these effects would help to enhance wilderness characteristics. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

Lands with Wilderness Characteristics

Land reclamation in Alternative A would be pursued, although not required, in disturbed areas. This could help to restore wilderness characteristics over the long term in areas with few wilderness characteristics. Impacts would vary, depending on how and if reclamation was achieved, including whether native or nonnative seeds were used in revegetating lands. Any impacts would not be new.

There would be no soil compaction prevention measures under Alternative A. This would indirectly impact vegetation because soil compaction prevents water infiltration and may affect plant health and vigor. This could affect wilderness characteristics if ecosystems were unhealthy. However, there would be no restrictions on vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumption, above. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative B

Lands with Wilderness Characteristics

Impacts from land reclamation activities relating to soil resources management under Alternative B would be the same as those under Alternative A.

The BLM would allow multiple uses while mitigating adverse effects from soil compaction without seasonal closures. No seasonal restrictions for compaction would be applied; as such, lands with wilderness characteristics would be impacted year-round, even during times when soils would be most susceptible to compaction. This could degrade ecosystem health and wilderness characteristics. However, vegetation improvement treatments could also occur year-round, which would have impacts similar to those described under Methods and Assumptions, above. Effects would be long term.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Lands with Wilderness Characteristics

Land reclamation actions under Alternative C would require reclamation of all surface-disturbing activities. This would allow for native vegetation to reestablish and would increase wilderness characteristics over the long term.

Soil compaction prevention measures are the most stringent under this alternative, providing for seasonal use restrictions. This would benefit wilderness characteristics by preventing compaction but would limit when vegetation treatments could occur. Impacts would be similar to those described under Methods and Assumptions, above.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative D

Lands with Wilderness Characteristics

Land reclamation actions under Alternative D would provide the most flexible approach to land reclamation. Impacts on wilderness characteristics would vary depending on how and if reclamation was achieved, including whether native or nonnative seeds were used in revegetating lands. Impacts would be long term.

Soil compaction prevention measures would include seasonal use restrictions, which would occur on a case-by-case basis. Impacts on wilderness characteristics include improved health and vigor from decreased soil compaction and increased infiltration over the long term.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Water Resources Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative A

Lands with Wilderness Characteristics

Under this alternative, priority watersheds would not be managed. Impacts on water resources would be reduced by complying with water quality regulations and implementing BMPs and land health standards. This would indirectly protect lands with wilderness characteristics throughout the WD but would provide the fewest action- and location-specific protections of all alternatives. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative B

Lands with Wilderness Characteristics

Priority watershed actions would protect wilderness characteristics in priority watersheds over the long term by restricting certain activities. Under this alternative, multiple uses would be allowed, which could cause some direct impacts on wilderness characteristics over the long term through increased human use, roads, or noise.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Lands with Wilderness Characteristics

Priority watershed actions under Alternative C would provide the greatest protection to wilderness characteristics by imposing the greatest restrictions within those areas over the long term. However, as exclusion zones, they would prevent vegetation improvement treatments, which would enhance wilderness characteristics, that are incompatible with the watershed's primary use. Impacts would be similar to those described under Methods and Assumptions, above.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative D

Lands with Wilderness Characteristics

Priority watershed actions would protect wilderness characteristics from disturbance over the long term by restricting certain activities within these areas. Management of priority watershed actions would protect 17 acres of the Granite Peak lands with wilderness characteristics from disturbance by restricting fluid minerals, solid minerals leasing, saleable minerals and rights-of-ways.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

In all alternatives, vegetation forest and woodland products management actions, such as managing for pinyon pine and juniper woodlands, could increase human presence, noise, access roads, and short-term disturbance to forests. This would directly reduce the wilderness characteristics in these areas. However, forest management actions, including monitoring, establishing early warning systems for insect or disease outbreaks, and making special consideration for aspen, cottonwood, and mountain mahogany, and stand treatments, are tools that could be used to improve forest health and increase native species prevalence. This would indirectly increase wilderness characteristics over the long term. Any impacts would not be new.

Implementing SOPs and mitigation measures would minimize or reduce impacts on woodland habitats, including the spread of weeds over the long term. This would increase wilderness characteristics in these areas. Any impacts would not be new.

The extent of forests and woodlands within the WD is limited, amounting to less than one percent of the total land area. As such, impacts on wilderness characteristics from forest and woodland product management actions would be limited and localized. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

Lands with Wilderness Characteristics

Fire and other vegetation improvement treatments would have impacts similar to those described under Methods and Assumptions, above. Any impacts would not be new.

Under Alternative A, pinyon and juniper woodlands would be managed for the greatest number of uses, which would directly reduce wilderness characteristics in these areas because disturbance and human use would be the greatest of all alternatives. Any impacts would not be new.

The BLM would designate other stands (e.g., pinyon/juniper) or portions of stands in the WD as old growth forest if an area exhibits the characteristics of old growth and is suitable for designation. This would help to maintain wilderness characteristics over the long term in localized areas. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative B

Lands with Wilderness Characteristics

Fire and other vegetation improvement treatments would have impacts similar to those described under Methods and Assumptions, above.

Pinyon and juniper woodlands would be managed for fewer uses than under Alternative A, although wilderness characteristics could be directly disturbed by human presence, noise, and overharvesting.

Old growth forests would not be designated under Alternative B, and none would be designated in the future. Adverse impacts on stands with old growth characteristics would be avoided, but these areas would not be managed to provide old growth characteristics in the future. This would have the greatest impact on wilderness characteristics in these areas over the long term in localized areas.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Lands with Wilderness Characteristics

Vegetation treatments would be the least aggressive under Alternative C, which would have the least impacts on wilderness characteristics. Impacts would be similar to those described under Methods and Assumptions, above.

Pinyon and juniper stands would be managed only for landscape value and Native American uses. With less harvesting allowed in pinyon and juniper stands, there would be less human disturbance to these areas, which would directly protect wilderness characteristics over the long term in localized areas.

This alternative would designate 27,605 acres of old growth forest and other stands as appropriate. This would preserve and maintain these forests and their wildlife habitat, which would protect wilderness characteristics. However, under Alternative C, stands would not be managed for old growth characteristics, which may be less effective in protecting wilderness characteristics. Effects would be localized.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative D

Lands with Wilderness Characteristics

Vegetation improvement treatments would have impacts similar to those described under Alternative B.

As in Alternative A, Alternative D would manage pinyon and juniper woodlands for the greatest number of uses, emphasizing multiple uses. Impacts would be the same as those under Alternative A.

This alternative would designate 27,605 acres of old growth forest and would designate other stands as appropriate in the future. In addition, old growth stands would be managed to facilitate old growth characteristics. As a result, wilderness characteristics would be most efficiently protected in Alternative D. Effects would be localized.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Vegetation—Invasive and Noxious Species Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Actions to decrease weeds on BLM-administered lands would indirectly improve ecosystem health and habitat values by increasing native species and decreasing the risk of catastrophic wildfire in both the short term and long term. Such a fire could damage or kill native vegetation and allow for the spread of weeds. As a result of these actions, wilderness characteristics would be increased over the long term. However, in the short term, human presence, roads, motorized vehicles, and machinery would directly decrease wilderness characteristics. Actions against weeds would have impacts similar to those described under Methods and Assumptions, above. Any impacts would not be new.

Further, coordination with agencies and implementation of BMPs would help minimize impacts on wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

Weeds management would allow for control of noxious weeds and invasive plants as necessary to maintain natural ecological balances within WSAs.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Chemical and Biological Control

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative B

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative C

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative D

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Improving degraded rangeland would reduce the prevalence of invasive species. This would reduce the risk of catastrophic wildfire on rangelands, which would destroy native vegetation. With healthier native vegetation, wilderness characteristics on rangelands would be improved over the long term. Any impacts would not be new.

Wilderness Study Areas

Vegetation management actions would help maintain natural ecological balances within WSAs. Seeding with native species would help restore natural vegetation in burned areas within WSAs or areas requiring habitat restoration.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Improving and maintaining meadows and riparian areas would increase human presence and access to these areas, degrading wilderness characteristics over the short term. However, healthier native vegetation that would result from this improvement and maintenance would increase wilderness characteristics over the long term. Any impacts would not be new.

The extent of riparian and wetland areas within the WD is limited, amounting to less than one percent of the total land area. As such, impacts on wilderness characteristics from riparian and wetland management actions would be limited and localized. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

Lands with Wilderness Characteristics

Vegetation improvement treatments for riparian and wetlands management would have impacts similar to those described under Methods and Assumptions, above.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative B

Lands with Wilderness Characteristics

Vegetation improvement treatments for riparian and wetlands management would have impacts similar to those described under Alternative A.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Lands with Wilderness Characteristics

The greatest amount of riparian areas and wetlands (a minimum of 85 percent) would be restored to PFC under this alternative. This would have the greatest benefit to wilderness characteristics over the long term in localized areas.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Option 1

Lands with Wilderness Characteristics

Grazing management would be used under this option to minimize impacts on riparian areas and wetlands. This could impact lands with wilderness characteristics because there would still be some soil compaction, weed spread or introduction, and vegetation trampling caused by livestock over the long term.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Option 2

Lands with Wilderness Characteristics

Removing grazing from lands in the WD would have the greatest benefit on lands with wilderness characteristics because there would be no impacts from livestock on soil compaction, weed spread or introduction, and vegetation trampling over the long term.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative D

Lands with Wilderness Characteristics

Riparian areas and wetlands would be managed so that 85 percent would be progressing toward or achieving PFC. Impacts would be similar to those described under Alternative C.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative A

Lands with Wilderness Characteristics

Actions near nesting migratory birds would be restricted to minimize human and vehicle presence, noise, and other disturbance, which would protect wilderness characteristics. These restrictions also could limit vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, above. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative B

Lands with Wilderness Characteristics

Reintroducing or transplanting big game species could directly and indirectly impact lands with wilderness characteristics by trampling, browsing, and spreading or introducing weeds. These represent both short-term and long-term impacts and could impact ecosystem health through decreased plant vigor or plant mortality and altered stand composition. This would degrade wilderness characteristics. Re-establishing extirpated species would improve wilderness characteristics, especially naturalness.

Under Alternative B, the fewest restrictions would be placed on actions near nesting migratory birds. This would prevent some disturbance to wilderness characteristics. It also could limit the type and timing of vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, above.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Lands with Wilderness Characteristics

Reintroducing or transplanting big game species could impact wilderness characteristics in ways similar to Alternative B.

The most restrictions would be placed on actions near nesting migratory birds. This would be most effective in preventing disturbance to these areas, which would protect wilderness characteristics. These restrictions also could limit the type and timing of vegetation improvement treatments, which would have impacts similar to those under Methods and Assumptions, above.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative D

Lands with Wilderness Characteristics

Reintroducing or transplanting big game species could impact wilderness characteristics in ways similar to Alternative A. Restrictions, similar to those described under Alternative A, would be placed on actions near nesting migratory birds. Management of priority wildlife habitat includes use restrictions applicable to fluid minerals, solid minerals leasing, saleable minerals and rights-of-way would provide protection to 18,001 acres of the Warm Springs lands with wilderness characteristics.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Special Status Species Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Special status species management across all alternatives would prevent activities leading to listing of species and would require plant inventories, sage-grouse, pygmy rabbit, bat, and raptor avoidance and mitigation and monitoring. Avoiding actions that impact listed or sensitive species or their habitat would protect and preserve wilderness characteristics by preventing human presence, roads, and noise in certain areas. However, this also could preclude implementing treatments that would improve ecosystem health and plant community composition. This would indirectly impact wilderness characteristics in these areas. Impacts would vary with the type of treatment proposed and the nature and extent of the restrictions. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

Lands with Wilderness Characteristics

Restrictions on actions near special status plants, sage-grouse and sage-grouse leks (courtship and mating areas, pygmy rabbits, and bat habitat would reduce disturbance to these areas and would protect wilderness characteristics. These restrictions could limit vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, above. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative B

Lands with Wilderness Characteristics

Alternative B places the least stringent restrictions on actions near special status plants, sage-grouse and sage-grouse leks, pygmy rabbits, and bat habitat. These restrictions would still reduce disturbance to these areas, protecting wilderness characteristics, and could limit vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, above.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Lands with Wilderness Characteristics

Alternative C places the greatest amount of restrictions on activities that occur near special status species and their habitats. Of all alternatives, this would have the greatest impact on wilderness characteristics, similar to those described under Alternatives A and B.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative D

Lands with Wilderness Characteristics

Impacts from these actions would be similar to those described under Alternative A.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Managing WHB within HMAs and HAs could impact wilderness characteristics by concentrating soil compaction and browsing into defined areas. This would concentrate such impacts as noxious weed invasion and plant reduction in certain areas, while preventing impacts in other areas. Limitations on certain activities, such as motor vehicle racing, would limit road use and noise disturbance, improving wilderness characteristics in these areas. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

Lands with Wilderness Characteristics

Population control measures would reduce the impact of WHB on lands by decreasing the risk of soil compaction, trampling, and the introduction or spread of weeds. This would help maintain ecosystem health and wilderness characteristics. However, developing alternate waters for WHB could increase ecosystem degradation from WHB, which would consequently degrade wilderness characteristics. Any impacts would not be new.

Alternating conversion of land between wild horse use and burro use would spread impacts on lands through time, as the species have slightly different habitat and forage preferences. This would indirectly benefit ecosystem health by minimizing WHB impacts, such as soil compaction, vegetation trampling, and the spread of weeds, in any given area at a certain time. This would indirectly foster wilderness characteristics in areas throughout the WD. Any impacts would not be new.

Protection measures for WHB would prohibit or limit certain activities in HMAs. This would prevent disturbance from human use, such as trampling and noise. Protection measures could limit vegetation improvement treatments in certain areas. However, mitigation measures would be used to provide a flexible approach to activities within HMAs. Impacts would be similar to those described under Methods and Assumptions, above. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative B

Lands with Wilderness Characteristics

Alternative B would implement the most aggressive population control measures. This would have the greatest effect in reducing the impact of WHB on wilderness characteristics by decreasing the risk of soil compaction, vegetation trampling, and the introduction or spread of weeds. AML reduction in response to decreased WHB water supply would intensify these impacts.

Under Alternative B, land would not be converted between wild horse use and burro use, which would impact ecosystem health by concentrating such WHB impacts as soil compaction, vegetation trampling, and weed spread in certain areas. This could indirectly impact lands with wilderness characteristics.

Protection measures for WHB would have impacts similar to those described under Alternative A.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Lands with Wilderness Characteristics

The least aggressive population control measures would be employed in Alternative C. This would have the lowest reduction of WHB impact on wilderness characteristics, but actions would still decrease the risk of soil compaction, trampling, and weed spread or introduction. However, AML reduction in response to decreased water availability for WHB would decrease impacts of WHB on lands with wilderness characteristics.

Impacts from conversion of land between wild horse use and burro use would be similar to those described under Alternative A.

Protection measures for WHB are the greatest under this alternative and would prohibit or limit certain activities in HMAs. This would protect wilderness characteristics from disturbance and would prevent impacts due to human use, such as vegetation trampling, noise, and litter.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative D

Lands with Wilderness Characteristics

Impacts from population control measures and development of alternative water sources would be similar to those described under Alternative A.

Impacts from conversion of land between wild horse use and burro use would be similar to those described under Alternative A.

Impacts from WHB protection measures would be similar to those described under Alternative A.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Wildland Fire Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Wildfire suppression would prevent catastrophic destruction of vegetation and would preserve wilderness characteristics in these areas over the long term. Minimum impact suppression tactics would minimize unanticipated effects on wilderness characteristics during fire suppression activities. Any impacts would not be new.

Managing fire for multiple suppression objectives would include minimum impact suppression techniques (MIST) which would help maintain WSA and Wilderness Characteristic values during

suppression. Fuels management would include construction of fuelbreaks which would help protect areas having wilderness characteristics from wildfire. ES&R treatments would help restore areas burned.

Implementing a response to wildfires, based on social, legal, and ecological consequences of the fire, would protect lands with wilderness characteristics from catastrophic fire over the long term. Any impacts would not be new.

Wilderness Study Areas

The BLM would develop and implement response to wildfires, based on social, legal, and ecological factors, to guide fire suppression, which involves a range of actions. There is the possibility that certain types of fire suppression actions could damage the wilderness values associated with WSAs. For example, heavy equipment could be used in a WSA during fire suppression actions, which could continue to alter the landscape and vegetation. Fire suppression restriction could limit the effectiveness of suppression actions such as restrictions on use of heavy equipment or retardant. However, associated resource damage from suppression equipment to resource values would be reduced.

Effects under Alternative A

Lands with Wilderness Characteristics

Alternative A does not identify areas that could benefit from conditional fire suppression management for a benefit. By not prioritizing suitable areas for conditional fire suppression for resource benefit, actions to improve wilderness characteristics may not be implemented in the most effective areas. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative B

Lands with Wilderness Characteristics

Under this alternative, 16,950 acres of protected wilderness characteristics areas would be designated as suitable for allowing conditional fire suppression management for a benefit. Wilderness characteristics would be maintained where fire would be acceptable to provide a resource benefit. This would prioritize areas where wilderness characteristics could be improved through the use of fire, allowing for more efficient and effective treatment application. These areas represent a small portion of the WD, so impacts would be localized.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Lands with Wilderness Characteristics

Alternative C does not identify areas that could benefit from allowing conditional fire suppression management for a benefit. By not prioritizing suitable areas for allowing conditional fire suppression management for a benefit, wilderness characteristics may not be fully protected.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative D

Lands with Wilderness Characteristics

Impacts would be the same as those described under Alternative B.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Cultural Resources Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Protection of cultural resources, such as aspen art trees and groves, would prevent disturbance and fragmentation of forests, which would indirectly protect wilderness characteristics. However, these protections may limit the type of vegetation improvement treatments that could be implemented; impacts would be similar to those described under Methods and Assumptions. These areas are small, relative to the total area of the WD, so impacts would be localized and would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative B

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative C

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative D

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Tribal Consultation

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Consulting with tribes to identify culturally significant plants, important habitats, and traditional use locations would emphasize protection of natural resources. This would indirectly limit disturbance and improve wilderness characteristics over the long term in certain areas. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative B

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative C

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative D

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Paleontological Resources Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative B

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative C

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative D

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Visual Resources Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Implementing VRM guidelines, particularly managing WSAs as Class I, would mitigate impacts on these areas. However, VRM guidelines could increase the difficulty of accomplishing vegetation management actions by limiting the extent or effectiveness of restoration efforts, such as logging or thinning. This could prevent certain areas from being treated effectively to improve forest health or species composition, which would indirectly reduce wilderness characteristics. Any impacts would not be new.

Wilderness Study Areas

The BLM would manage all WSAs as VRM Class I, which means changes to the characteristic landscape would be very low and must not attract attention.

Effects under Alternative A

Lands with Wilderness Characteristics

Under Alternative A, 420,271 acres and 346,302 acres would be managed to VRM Class I and II guidelines, respectively. Uses and activities would be mitigated to reduce impacts on wilderness characteristics. Overall, meeting VRM Class I and II guidelines would increase the difficulty of accomplishing forest and woodland management actions and would indirectly limit the extent or effectiveness of the management goals. Any impacts would not be new.

Wilderness Study Areas

Under Alternative A, the BLM would manage all WSAs as VRM Class I. Areas released from study would be inventoried using the VRM System to establish VRM classes. There would be no new impacts.

Effects under Alternative B

Lands with Wilderness Characteristics

Under Alternative B, 500 acres and 23,535 acres protected wilderness characteristics areas would be managed to VRM Class I and II guidelines, respectively. This alternative is the least restrictive to disturbance in areas that have wilderness characteristics. Impacts would be similar to those described under Alternative A.

Wilderness Study Areas

Under Alternative B, the BLM would manage all WSAs as VRM Class I. Areas released from study would be managed as VRM Class II. This would provide a definite level of management that would retain the character of the landscape, thereby improving the likelihood of protecting the visual resources that were, in part, responsible for designating the area as a WSA.

Effects under Alternative C

Lands with Wilderness Characteristics

Under Alternative C, 500 acres of protected wilderness characteristics areas would be managed to VRM Class I guidelines and 104,957 acres of protected wilderness characteristics areas would be managed to VRM Class II guidelines. This alternative is the most protective of wilderness characteristics.

Wilderness Study Areas

The impacts from managing the visual resources of WSAs released from wilderness consideration would be the same as those under Alternative B.

Effects under Alternative D

Lands with Wilderness Characteristics

Under Alternative D, 500 acres and 104,745 acres protected wilderness characteristics areas would be managed to VRM Class I and II guidelines, respectively. Impacts would be similar in magnitude to those described under Alternative C, since wilderness characteristics areas would be protected under Alternative D.

Wilderness Study Areas

The impacts from managing the visual resources of WSAs released from wilderness consideration would be the same as those under Alternative B.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative B

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative C

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative D

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Livestock Grazing Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Collecting monitoring data may help to improve rangelands and reduce the spread of weeds. This would, in turn, reduce the likelihood of catastrophic fire that would destroy native vegetation. As such, wilderness characteristics would be protected, and any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

Lands with Wilderness Characteristics

Livestock grazing would continue to be allowed on 8,232,727 acres of land under this alternative, which would have the greatest impact on wilderness characteristics. Grazing, including grazing on acquired lands, and range improvement actions would reduce fuel loads on these lands, making catastrophic fire less likely over the long term. This would indirectly allow for the maintenance and preservation of lands with wilderness characteristics within the WD. Any impacts would not be new.

Riparian areas would be protected, preventing impacts through soil compaction, vegetation trampling, and the introduction or spread of weeds. This would maintain plant vigor, stand composition, and fire regimes, which would indirectly improve wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

There would be no change to the number of acres of grazing allotments. There would be no new impacts.

The BLM would use adaptive management principles and practices to achieve resource objectives as long as such principles and practices conform to the IMP. New range developments and structural improvements could be permitted within WSAs if the development would enhance wilderness values.

Effects under Alternative B

Lands with Wilderness Characteristics

Under Alternative B, livestock grazing would be open on 178,167 acres of protected wilderness characteristics areas, which would impact wilderness characteristics. Impacts would be similar to those described under Alternative A.

Wilderness Study Areas

The impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Option 1

Lands with Wilderness Characteristics

Similar to Alternative B, livestock grazing would be open on 178,167 acres of protected wilderness characteristics areas under this alternative, which would impact wilderness characteristics. Grazing and range improvement actions would reduce fuel loads on these lands, making catastrophic fire to lands with wilderness characteristics less likely over the long term. Grazing would not be permitted on acquired land, increasing the risk of fire in nearby lands with wilderness characteristics.

Greater protection would be given to riparian woodlands, requiring the restoration and maintenance of biological integrity in these areas. This would prevent impacts through soil compaction, vegetation trampling, and the introduction or spread of weeds and would maintain plant vigor, stand composition, and fire regimes. This would indirectly protect wilderness characteristics over the long term.

Wilderness Study Areas

The impacts on WSAs would be the same as those under Alternative A.

Option 2

Lands with Wilderness Characteristics

The no grazing option would not use livestock grazing to reduce fuel loads, increasing the risk of catastrophic fire in lands with wilderness characteristics. However, this alternative would give greater protection to riparian woodlands, as under Alternative C, Option 1.

Wilderness Study Areas

There is no grazing in WSAs under Alternative C, Option 2. By preventing livestock from trampling and eating vegetation, this could improve natural habitat conditions in the WSAs.

Because there would be no grazing in WSAs, the BLM would not install structural improvements in WSAs. There would be no change to the wilderness values of WSAs.

Effects under Alternative D

Lands with Wilderness Characteristics

Similar to Alternative B, Alternative D would have 178,167 acres of protected wilderness characteristics areas open to grazing. Impacts would be similar to those described under Alternative A, except that fewer acres of land would be open to grazing.

Wilderness Study Areas

The impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Minerals Management

Effects Common to All Alternatives

Saleable

Lands with Wilderness Characteristics

Impacts on wilderness characteristics could result from saleable minerals management. Impacts associated with these actions would include increased human presence, machinery, noise, loss or injury of plants due to excavation or trampling, toxic responses from use of chemicals in mineral extraction, and increased exposure to dust and other contaminants associated with construction and use of access roads. In the worst-case scenario, all vegetation would be removed from a parcel of land, and the site would be permanently altered. Any impacts would not be new.

Special status species habitat would be avoided, which would indirectly protect wilderness characteristics in some areas. Overall, wilderness characteristics could be degraded by minerals management actions. Any impacts would not be new.

Wilderness Study Areas

The BLM would continue to maintain WSAs as closed to mineral material disposal. This would continue to protect the wilderness values of the WSAs from mineral material activities. There would be no new impacts.

Fluid

Lands with Wilderness Characteristics

Impacts on wilderness characteristics could result from fluid minerals management. Impacts associated with these actions include increased human presence, machinery, noise, loss or injury of plants due to excavation or trampling, toxic responses from use of chemicals in mineral extraction, and increased exposure to dust and other contaminants associated with construction and use of access roads. In the worst-case scenario, all vegetation would be removed from a parcel of land, and the site would be permanently altered. Any impacts would not be new.

Special status species habitat would be avoided, which would indirectly protect wilderness characteristics in some areas. Overall, wilderness characteristics could be degraded by minerals management actions. Any impacts would not be new.

Wilderness Study Areas

The BLM would continue to maintain WSAs as closed to leasing. This would continue to protect the wilderness values of the WSAs from fluid mineral activities. There would be no new impacts.

The BLM would not allow fluid mineral leases within a quarter mile of a WSA boundary. This would provide a buffer between WSAs and fluid mineral-related activities, reducing the likelihood of these activities diminishing the outstanding values for which the area was designated as a WSA. There would be no new impacts.

Solid

Lands with Wilderness Characteristics

Impacts on wilderness characteristics could result from solid minerals management. Impacts associated with these actions would include increased human presence, machinery, noise, loss or injury of plants due to excavation or trampling, toxic responses from use of chemicals in mineral extraction, and increased exposure to dust and other contaminants associated with construction and use of access roads. In the worst-case scenario, all vegetation would be removed from a parcel of land, and the site would be permanently altered. Any impacts would not be new.

Special status species habitat would be avoided, which would indirectly protect wilderness characteristics in some areas. Overall, wilderness characteristics could be degraded by minerals management actions. Any impacts would not be new.

Wilderness Study Areas

The BLM would continue to maintain WSAs as closed to solid mineral leasing. This would continue to protect the wilderness values of the WSAs from solid mineral activities. There would be no new impacts.

The BLM would not allow solid mineral leases within a quarter mile of a WSA boundary. This would provide a buffer between WSAs and solid mineral-related activities. This would reduce the likelihood of these activities diminishing the outstanding values for which the area was designated as a WSA. There would be no new impacts.

Locatable

Lands with Wilderness Characteristics

Impacts on wilderness characteristics could result from locatable minerals management. Impacts associated with these actions would include increased human presence, machinery, noise, loss or injury of plants due to excavation or trampling, toxic responses from use of chemicals in mineral extraction, and increased exposure to dust and other contaminants associated with construction and use of access roads. In the worst-case scenario, all vegetation would be removed from a parcel of land, and the site would be permanently altered. Any impacts would not be new.

Special status species habitat would be avoided, which would indirectly protect wilderness characteristics in some areas. Overall, wilderness characteristics could be degraded by minerals management actions. Any impacts would not be new.

Wilderness Study Areas

Activities resulting from pre-FLPMA exploration and development, under certain circumstances, may impair wilderness values in WSAs. The IMP does not allow any post-FLPMA mining activities that would impair suitability for wilderness use. Consequently, effects on wilderness values would be nonexistent for post-FLPMA activities.

RFDs

Future actions based on reasonable development could result in indirect impacts. Future exploration and development could involve new structures, roads, and operations. These new structures, roads, and operations could be in areas where people live and work, where frequent recreation occurs, or where minimal nearby development exists.

Effects under Alternative A

Saleable

Lands with Wilderness Characteristics

Areas open to mineral material disposal could impact wilderness characteristics, as described under the Mineral Resources Effects Common to All Alternatives section. Alternative A opens 6,786,059 acres to saleable minerals. Any impacts would not be new.

The fewest acres (418,938 acres) would be closed to mineral material disposal under Alternative A; therefore, this alternative would be the least effective in preventing impacts on wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

Alternative A does not include actions for limiting mineral material disposal adjacent to WSAs. There would be no new impacts, and ongoing impacts would continue. For example, mineral material activities could continue to occur adjacent to WSAs, which could result in mineral material and related activities that could diminish the outstanding values that were responsible for designating the area as a WSA.

Fluid

Lands with Wilderness Characteristics

Alternative A opens the greatest acreage (6,745,878 acres) to fluid minerals and would therefore have the greatest impact over the long term. Impacts would be similar to those described under Effects Common to All Alternatives for Minerals Management. Any impacts would not be new.

The fewest acres (446,887 acres) would be closed to fluid minerals under Alternative A; therefore, this alternative would be the least effective in preventing impacts on wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Solid

Lands with Wilderness Characteristics

Alternative A opens the greatest acreage (6,776,198 acres) to solid mineral leasing and would therefore have the greatest impact over the long term. Impacts would be similar to those described

under Effects Common to All Alternatives for Minerals Management. Any impacts would not be new.

The fewest acres (416,652 acres) would be closed to solid minerals under Alternative A; therefore, this alternative would be the least effective in preventing impacts on wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Locatable

Lands with Wilderness Characteristics

Alternative A opens the greatest acreage (7,198,294 acres) to locatable mineral leasing and would therefore have the greatest impact over the long term. Impacts would be similar to those described under Effects Common to All Alternatives for Minerals Management. Any impacts would not be new.

The fewest acres (6,543 acres) would be segregated or withdrawn to locatable minerals under Alternative A; therefore, this alternative would be the least effective in preventing impacts on wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative B

Saleable

Lands with Wilderness Characteristics

Alternative B opens the greatest acreage (29,902 acres) of protected wilderness characteristics areas to saleable mineral development and would therefore have the greatest impact over the long term. Special status species habitat would be avoided, which could indirectly protect lands with wilderness characteristics over the long term. Impacts would be similar to those described under Effects Common to All Alternatives for Minerals Management.

The fewest acres (500 acres) of protected wilderness characteristics areas would be closed to mineral material disposal under Alternative B; therefore, this alternative would be the least effective in preventing impacts on wilderness characteristics over the long term.

Wilderness Study Areas

The impacts from mineral material disposal actions adjacent on WSAs would be the same as those under Alternative A.

Fluid

Lands with Wilderness Characteristics

Areas open to fluid mineral leasing could impact forests through impacts similar to those described under Effects Common to All Alternatives for Minerals Management. Alternative B would open 29,902 acres of protected wilderness characteristics areas to fluid minerals. Restrictions would protect habitats within 100 yards of documented golden eagle, bald eagle, peregrine falcon, or prairie falcon nesting sites. This would preserve wilderness characteristics in these areas.

Under Alternative B, 57,063 acres of protected wilderness characteristics areas would be closed to fluid mineral leasing.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Solid

Lands with Wilderness Characteristics

Under Alternative B, 29,902 acres of protected wilderness characteristics areas would be open to solid mineral leasing, causing impacts similar to those described under Effects Common to All Alternatives for Minerals Management.

Impacts would be limited on 57,063 acres of protected wilderness characteristics areas, where lands would be closed to solid mineral leasing.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Locatable

Lands with Wilderness Characteristics

Similar to Alternative A, Alternative B opens the least acreage (16,854 acres) of protected wilderness characteristics areas to locatable minerals and would cause the least impact on protected wilderness characteristics areas over the long term. Impacts would be similar to those described under Effects Common to All Alternatives for Minerals Management.

No acres of protected wilderness characteristics areas would be segregated or withdrawn to locatable minerals under Alternative B; therefore, this alternative would be the least effective in preventing impacts on wilderness characteristics over the long term.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Saleable

Lands with Wilderness Characteristics

Alternative C would open the least acreage (860 acres) of protected wilderness characteristics areas to saleable minerals, which would be most effective in preventing impacts on wilderness characteristics over the long term. Under this alternative, 157,705 acres of protected wilderness characteristics areas would be closed to saleable minerals.

Wilderness Study Areas

Under Alternative C, mineral material disposals would not be allowed within a quarter mile of a WSA boundary. This would provide a buffer between WSAs and mineral material-related activities, reducing the likelihood of these activities diminishing the outstanding values responsible for designating the area as a WSA.

Fluid

Lands with Wilderness Characteristics

Alternative C would open the least acreage (860 acres) of protected wilderness characteristics areas to fluid minerals, which would be most effective in preventing impacts on wilderness characteristics over the long term. Under this alternative, 220,779 acres of protected wilderness characteristics areas would be closed to fluid minerals.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Solid

Lands with Wilderness Characteristics

Alternative C would open the least acreage (860 acres) of protected wilderness characteristics areas to solid minerals, which would be most effective in preventing impacts on wilderness characteristics over the long term. Under this alternative, 220,779 acres of protected wilderness characteristics areas would be closed to solid minerals.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Locatable

Lands with Wilderness Characteristics

Alternative C would open 28,668 acres of protected wilderness characteristics areas to locatable minerals, which would have impacts on wilderness characteristics over the long term. Protections

would be provided on 75,333 acres, where land would be segregated or withdrawn to locatable minerals.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative D

Saleable

Lands with Wilderness Characteristics

Alternative D would open 28,013 acres of protected wilderness characteristics areas to saleable minerals. Seasonal restrictions would minimize impacts on lands with wilderness characteristics within two miles of active sage-grouse leks. Overall, Alternative D would have the least impact on wilderness characteristics over the long term.

Under this alternative, 22,197 acres of protected wilderness characteristics areas would be closed to saleable minerals. Impacts would be similar to those described under Effects Common to All Alternatives for Minerals Management.

Wilderness Study Areas

The impacts from mineral material disposal actions adjacent to WSAs would be the same as those under Alternative C.

Fluid

Lands with Wilderness Characteristics

Areas open to fluid mineral leasing could impact protected wilderness characteristics areas through impacts similar to those described under Effects Common to All Alternatives for Minerals Management. Alternative D would open 28,507 acres and close 75,955 acres to fluid minerals.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Solid

Lands with Wilderness Characteristics

Under Alternative D, 28,507 acres of protected wilderness characteristics areas would be open to solid mineral leasing, causing impacts similar to those described under Effects Common to All Alternatives for Minerals Management.

Impacts would be limited on 75,955 acres, where protected wilderness characteristics areas would be closed to solid mineral leasing.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Locatable

Lands with Wilderness Characteristics

Under Alternative D, the greatest acreage (36,827 acres) of protected wilderness characteristics areas would be open to locatable mineral claim location, causing the greatest impacts of all alternatives. Impacts would be similar to those described under Effects Common to All Alternatives for Minerals Management. No acres of protected wilderness characteristics areas would be segregated or withdrawn to locatable minerals.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Managing BLM-administered lands to provide dispersed recreation could directly degrade wilderness characteristics throughout the WD through human disturbance, noise, weed introduction or spread, and impacts on vegetation. Impacts would vary, depending on the type of activities allowed in the area, and could be short term and long term. Any impacts would not be new.

To manage OHV use, the Transportation Plan would be updated and would account for special management areas, including lands with wilderness characteristics. Specific sites would be subject to NEPA analysis to minimize impacts on wilderness characteristics.

Vegetation improvement treatments may be restricted on some lands used for recreation, which would have impacts similar to those described under Methods and Assumptions at the beginning of this chapter. Any impacts would not be new.

Wilderness Study Areas

The BLM would continue managing OHV use in WSAs as limited to designated roads and trails identified at the time of the wilderness inventory (per guidance from IMP). There would be no new impacts.

To manage OHV use, the Transportation Plan would be updated and would account for special management areas, including WSAs. Specific sites would be subject to NEPA analysis to minimize impacts on WSAs.

Effects under Alternative A

Lands with Wilderness Characteristics

Under Alternative A, there would be no camping limitations or prohibitions throughout the WD. In addition, the Pine Forest SRMA would be maintained, and issuance of special recreation permits would be the least restricted. The greatest acreage (6,789,612 acres) would be open to OHVs under Alternative A, with the least amount of land (423,786 acres) limited and with 17,698 acres closed. Combined, these actions would allow for disturbance from increased human presence, OHV use, trail creation, and noise. This, in turn, could compact soils, trample vegetation, disturb wildlife, and increase dust, which could decrease plant vigor and alter stand composition of areas throughout the WD. As a result, wilderness characteristics would be directly and indirectly degraded. Any impacts would not be new.

Wilderness Study Areas

If Congress were to release a WSA from consideration as wilderness, the BLM would continue to manage all or parts of a WSA for purposes other than wilderness, using a variety of resource management objectives.

Effects under Alternative B

Lands with Wilderness Characteristics

Camping limitations and prohibitions throughout the ERMA would minimize impacts on wilderness characteristics on these lands. In addition, designating four SRMAs would impact wilderness characteristics to varying degrees, depending on the recreation market identified for the SRMA. For example, the Nightingale SRMA would be targeted for undeveloped recreation-tourism, which would have less of an impact than Winnemucca and Pine Forest SRMAs, which allow for increased motorized vehicle access. The Granite Range SRMA would target self-directed recreation, primarily on foot, but it would also promote private entities to create visitor facilities, which could impact wilderness characteristics. Under Alternative B, protected wilderness characteristics areas would not be open to OHVs, with the least amount of protected wilderness characteristics areas (4,281 acres) closed and with 217,358 acres limited. Together, impacts from these actions include increased human and vehicle presence, noise, soil compaction, vegetation trampling, wildlife disturbance, and increased dust. These impacts could decrease plant vigor, alter stand composition, and lower wilderness characteristics in areas throughout the ERMA, SRMAs, and OHV routes. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed.

Issuance of special recreation permits would be the least restrictive under this alternative, which could cause some impacts on wilderness characteristics through increased human use, trampling, litter, and noise disturbance.

Wilderness Study Areas

If Congress were to release a WSA from consideration as wilderness, the BLM would continue to manage all or parts of a WSA for purposes other than wilderness, using a variety of resources management objectives.

Effects under Alternative C

Lands with Wilderness Characteristics

Camping limitations and prohibitions throughout the ERMA would minimize impacts on wilderness characteristics on these lands. In addition, designating two SRMAs would have impacts on forest vegetation similar to those described under Alternative B. Under Alternative C, no acres within protected wilderness characteristics areas would be open to OHVs, with 21,698 acres closed and 195,659 acres limited. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. Impacts from recreation actions would be lowest under this alternative, as it is the most restrictive and prohibitive. Impacts would occur, however, they would be similar to those described under Alternative B.

Issuance of special recreation permits would be the most restrictive under Alternative C and would cause the least impact on wilderness characteristics through increased human use, trampling, litter, and noise disturbance.

Wilderness Study Areas

The impacts would be the same as those under Alternative A.

Effects under Alternative D

Lands with Wilderness Characteristics

Camping limitations and prohibitions throughout the ERMA would minimize impacts on wilderness characteristics on these lands. In addition, designation of four SRMAs would have the same impacts on wilderness characteristics as those described under Alternative B. Under Alternative D, no acres within protected wilderness characteristics areas would be open to OHVs, with 4,281 acres closed and with 217,358 acres limited. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. Together, impacts from these actions would be similar to those described under Alternative B.

Issuing special recreation permits would cause some impacts on wilderness characteristics through increased human use, trampling, litter, and noise disturbance.

Wilderness Study Areas

The impacts would be the same as those under Alternatives A and B.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Renewable Energy Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Impacts on wilderness characteristics could occur with issuance of new ROWs, which require vegetation clearing and access roads and would increase human presence, machinery, noise, weed potential, and habitat fragmentation. This would degrade wilderness characteristics over the long term. BMPs, stipulations, and mitigation measures would be implemented to minimize impacts. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

Lands with Wilderness Characteristics

Maintaining existing exclusion areas within the WD would protect and limit disturbance to vegetation and habitat and would prevent noxious weed invasion or spread caused by development. This would protect wilderness characteristics over the long term. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative B

Lands with Wilderness Characteristics

Designating avoidance areas within the WD would protect and limit disturbance to vegetation and habitat and would prevent noxious weed invasion or spread caused by development. This would protect wilderness characteristics in these areas over the long term.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Lands with Wilderness Characteristics

Designating avoidance areas and exclusion zones within the WD would have the greatest impact on wilderness characteristics by protecting and limiting disturbance to vegetation and habitat and by preventing noxious weed invasion or spread.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative D

Lands with Wilderness Characteristics

Designating avoidance areas and exclusion zones within the WD would impact wilderness characteristics by protecting and limiting disturbance to vegetation and habitat and by preventing noxious weed invasion or spread.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Transportation and Access Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Maintaining roads necessary for fire suppression would allow for increased human presence, noise, and access to certain areas, which would degrade wilderness characteristics. However, roads would allow for suppression of wildfires when necessary, which would protect native vegetation and wilderness characteristics over the long term. Any impacts would not be new.

Vegetation improvement actions, such as noxious weed control measures, would have impacts similar to those described under Methods and Assumptions, at the beginning of this chapter. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

Lands with Wilderness Characteristics

Transportation actions under Alternative A would not protect wildlife, sensitive species, or their habitats. As a result, wilderness characteristics could be impacted by road and trail construction from vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased dust and noise. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative B

Lands with Wilderness Characteristics

Transportation actions to minimize effects on wildlife, sensitive species, and habitat would protect and limit disturbance to vegetation and habitat and would prevent noxious weed invasion or spread

from road or trail construction. This would protect wilderness characteristics in these areas over the long term.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Lands with Wilderness Characteristics

Impacts would be similar to those described under Alternative B.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative D

Lands with Wilderness Characteristics

Impacts would be similar to those described under Alternative B.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Lands and Realty Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Vegetation and wildlife habitat value would be given consideration when the WD makes disposal and acquisition decisions, which could indirectly protect wilderness characteristics over the long term. Acquisition of lands would provide additional opportunities to improve wilderness characteristics in these areas. Any impacts would not be new.

Acquisition of environmentally sensitive land and conservation easements would protect and limit disturbance and fragmentation of vegetation and habitat and would prevent noxious weed invasion or spread caused by development. This would protect wilderness characteristics on these lands. These acquisitions could limit vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, which appear at the beginning of this chapter. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

Lands with Wilderness Characteristics

Issuance of ROWs would not be limited, and avoidance areas or exclusion zones for lands and realty management actions would not be designated under Alternative A. Wilderness characteristics could be directly impacted from vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased dust and noise. Any impacts would not be new.

Wilderness Study Areas

The BLM would continue to not prioritize the acquisition of inholdings in WSAs. There would be no new impacts, and those identified under Alternative C would not occur.

No avoidance and exclusion areas would be established in WSAs if they were released from consideration as wilderness. There would be no new impacts on WSAs, and ongoing impacts would continue. For example, development could occur in areas with sensitive natural resources, which could diminish the qualities of the resources.

Effects under Alternative B

Lands with Wilderness Characteristics

Designating avoidance areas would have impacts similar to the renewable energy management actions under Alternative B.

Lack of restriction on ROW issuance could directly impact wilderness characteristics via vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased noise and dust. This would degrade wilderness characteristics over the long term.

Wilderness Study Areas

The impacts from land acquisition prioritization would be the same as those under Alternative A.

No avoidance and exclusion areas would be established in WSAs if they were released from consideration as wilderness, resulting in the same impacts as those under Alternative A.

Avoidance areas for Disaster Peak WSA (632 acres) and North Fork of the Little Humboldt River WSA (67,284 acres) would be established if the WSA were released from consideration as wilderness. These avoidance areas would protect natural resources from development and disturbance.

Effects under Alternative C

Lands with Wilderness Characteristics

Designating avoidance areas and exclusion zones would have impacts similar to renewable energy management actions under Alternative C.

Restricting ROW issuance could directly impact wilderness characteristics by protecting and limiting vegetation disturbance, habitat fragmentation, and noxious weed invasion or spread from road construction.

Wilderness Study Areas

The BLM would prioritize the acquisition of inholdings in WSAs. This would improve the WSA management by identifying areas that would facilitate land purchases to accomplish objectives for WSA management.

The following exclusion areas would be established if the WSA were released from consideration as wilderness:

- Alder Creek WSA—5,145 acres;
- Blue Lakes WSA—19,904 acres;
- Disaster Peak WSA—12,696 acres; and
- North Fork of the Little Humboldt River WSA—69,305 acres.

The following avoidance areas would be established if the WSA were released from consideration as wilderness:

- China Mountain WSA—10,201 acres;
- Mt. Limbo WSA—24,810 acres;
- Selenite Mountains WSA—31,948 acres; and
- Tobin Range WSA—13,161 acres.

These exclusion and avoidance areas would protect natural resources from development and disturbance.

Effects under Alternative D

Lands with Wilderness Characteristics

Designating avoidance areas and exclusion zones would impact wilderness characteristics by protecting and limiting disturbance to vegetation and habitat and by preventing noxious weed invasion or spread.

Lack of restriction on ROW issuance could directly impact wilderness characteristics through vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased noise and dust.

Wilderness Study Areas

The impacts from land acquisition prioritization would be the same as those under Alternative C.

Alternative D would establish the same exclusion areas as Alternative B. The following avoidance areas would be established if the WSA were released from consideration as wilderness:

- Alder Creek WSA—5,145 acres;
- Blue Lakes WSA—19,904 acres;
- China Mountain WSA—10,201 acres;
- Disaster Peak WSA—12,696 acres;
- Mt. Limbo WSA—24,810 acres;
- Selenite Mountains WSA—31,948 acres; and
- Tobin Range WSA—13,161 acres.

These exclusion and avoidance areas would protect natural resources from development and disturbance.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from ACEC/RNA Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

ACECs would provide more undisturbed areas with lower human presence, fewer roads, noise, and other disturbances. This would protect wilderness characteristics on these lands. However, restrictions on vegetation improvement treatments could have impacts similar to those described under Methods and Assumptions, which appears at the beginning of this chapter. ACECs are small, relative to the total area of the WD, so they would be localized. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

Lands with Wilderness Characteristics

Maintaining the Osgood Mountains ACEC would protect vegetation and habitat and would prevent disturbance and fragmentation of habitat within the ACEC, thereby protecting wilderness characteristics. This action could increase vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, found at the beginning of this chapter. This ACEC is small, relative to the total area of the WD, so impacts would be localized and would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative B

Lands with Wilderness Characteristics

Effects from ACEC/RNA management under Alternative B would be the same as those under Alternative A.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Lands with Wilderness Characteristics

Designating four ACECs within the WD would provide the greatest protection to wilderness characteristics and would prevent disturbance and fragmentation of forested areas within these ACECs. This action could limit implementation of vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions.

Wilderness Study Areas

Impacts on WSAs would be dependent if an ACEC designation overlays a WSA. In those areas ACEC mgt. would go into effect if the WSA is released from WSA designation by Congress.

Effects under Alternative D

Lands with Wilderness Characteristics

Effects from ACEC/RNA management under Alternative D would be similar to those under Alternative C. The proposed Stillwater ACEC would provide use restrictions applicable to fluid minerals, solid minerals leasing, and saleable minerals to protect wilderness characteristics, especially naturalness, of approximately 18,892 acres of the Fencemaker lands with wilderness characteristics area.

Portions of three of the seven areas identified as containing lands with wilderness characteristics would receive additional protections based on management of priority wildlife habitat areas, priority watersheds, and management of ACECs. About 18,001 acres of the Warm Springs area would be protected under priority wildlife habitat management. Approximately 17 acres of the Granite Peak area would be protected under priority watershed management. Approximately 18,892 acres of the Fencemaker area would be protected under the proposed Stillwater ACEC. Protective management under the above authorities includes no surface disturbance and no surface occupancy use restrictions applicable to fluid minerals, solid minerals leasing, and saleable minerals.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Backcountry Byways Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Backcountry byways may attract more tourism to areas that they access and could increase human use and degradation of nearby lands. This would directly degrade wilderness characteristics in these areas. Currently, Lovelock Cave is the only BCB, but it does not access large forested areas. However, expansion of BCBs could cause greater impact on wilderness characteristics. Impacts would vary, depending on the locations of new BCBs and the areas they would access. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative B

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative C

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative D

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from National Historic Trails Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative B

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative C

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative D

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

The NWSRS eligible segments of Washburn Creek and Crowley Creek do not fall within or intersect any part of a wilderness study area and would not have any impacts on wilderness study areas.

Effects under Alternative A

Lands with Wilderness Characteristics

Under Alternative A, eligible river corridors would be given protection either through continued interim protective management or the development of Comprehensive River management Plans. In both cases, management within the 13,583 acres of eligible corridors would prohibit or minimize the impacts of activities, which would be inconsistent with ORVs. This would generally provide additional protection of any lands with wilderness characteristics that fall within these corridors.

Wilderness Study Areas

Under Alternative A, the NWSRA eligible segment of the North Fork of the Humboldt River would be given protection either through continued interim protective management or the development of Comprehensive River management Plans. In both cases, all 5,417 acres of the eligible corridor would be managed to preserve ORVs. In general, this would provide extra protection to the portion of the North Fork of the Little Humboldt River WSA that fall within the eligible corridor.

Effects under Alternative B

Lands with Wilderness Characteristics

There would be no impacts on lands with Wilderness characteristics from WSR management under Alternative B.

Wilderness Study Areas

There would be no impacts on WSAs from WSR management under Alternative B.

Effects under Alternative C

Lands with Wilderness Characteristics

Impacts on lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative D

Lands with Wilderness Characteristics

Under Alternative D, there likely would be no impacts on lands with wilderness characteristics from WSR management as long as WSA, priority habitat, and priority watershed management, as outlined in the remainder of the RMP, are implemented. In the case that these management actions are not implemented or are removed after implementation, interim protective management measures would be implemented within the 13,583 acres of eligible WSR corridors, which would have the same effects as those described under Alternatives A and C.

Wilderness Study Areas

Under Alternative D, there likely would be no impacts on WSAs from WSR management as long as WSA, priority habitat, and priority watershed management, as outlined in the remainder of the RMP, are implemented. In the case that these management actions are not implemented or are removed after implementation, interim protective management measures would be implemented within the 13,583 acres of eligible WSR corridors, which would have the same effects as those described under Alternatives A and C.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

Management of lands with wilderness characteristics would prevent disturbance in certain areas within the WD, which would protect wilderness characteristics. However, these would impact vegetation improvement treatments on these lands, which would have impacts similar to those described under Methods and Assumptions. Lands with wilderness characteristics are small relative to the total area of the WD, so impacts would be localized. Any impacts would not be new.

Wilderness Study Areas

The BLM would continue to manage WSAs under BLM Manual #6330 Management of Wilderness Study Areas (BLM 2012e) until Congress either designates these areas or releases them for other purposes. If Congress were to release a WSA from consideration as wilderness, the BLM would continue to manage all or parts of a WSA for purposes other than wilderness, using a variety of resources management objectives. There would be no new impacts.

Effects under Alternative A

Lands with Wilderness Characteristics

Alternative A provides the least protection for wilderness characteristics because it would manage these areas for multiple uses, which would allow for some human disturbance. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no specific actions that are likely to affect WSAs.

Effects under Alternative B

Lands with Wilderness Characteristics

Impacts would be similar to but less than those described under Alternative A. Under Alternative B, the BLM would manage 211,638 acres of lands containing wilderness characteristics. This would allow for more targeted and effective management of wilderness characteristics to meet multiple use and sustained yield objectives, compared with Alternative A.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Effects under Alternative C

Lands with Wilderness Characteristics

Alternative C would provide the greatest protection to lands outside of WSAs with wilderness characteristics by specifically managing 211,638 acres to protect wilderness characteristics and implementing restrictions and stipulations in these areas, including closure to mineral leasing and ROW exclusion zones.

Wilderness Study Areas

The BLM would protect wilderness characteristics with a designation of closed to mineral leasing, ROW exclusion zones, and priority habitat 1 in the portion of the Tobin Range between the China Mountain WSA and the Mount Tobin WSA (33,854 acres). This would limit certain types of activities and, in turn, would preserve the naturalness of the areas next to the WSAs.

Effects under Alternative D

Lands with Wilderness Characteristics

Impacts would be similar to but greater than those described under Alternative C. Under Alternative D, the BLM would manage 211,638 acres to protect wilderness characteristics. Restrictions and stipulations would be implemented but are unspecified to provide a flexible and location-specific approach to management of individual areas. Impacts would depend on the restrictions that are applied and the uses that are allowed.

Wilderness Study Areas

Impacts on WSAs would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Lands with Wilderness Characteristics

WWV sites could directly impact wilderness characteristics by allowing for more human presence, noise, and vehicles to the sites over the long term. These areas are small relative to the total area of the WD, so impacts would be localized. Any impacts would not be new.

Wilderness Study Areas

There would be no impacts because there are no actions that are likely to affect WSAs.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative B

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative C

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative D

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Public Health and Safety Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative B

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative C

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative D

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Effects from Sustainable Development Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WSAs or lands with wilderness characteristics.

Effects under Alternative B

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative C

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Effects under Alternative D

Impacts on WSAs or lands with wilderness characteristics would be the same as those under Alternative A.

Wilderness Study Areas and Lands with Wilderness Characteristics: Cumulative Effects

Past and Present Actions

WSAs – Few discernible impacts have occurred to wilderness study areas based on livestock and WHB grazing, except in areas of concentrated grazing impacting, water sources, wilderness characteristics and visitor experiences. These impacts have been reduced based on managing to achieve land health standards and through permit requirements. Minerals, renewable energy

development, and ROWs use restrictions have limited or prohibited development within WSAs, subject to valid existing rights.

Heavy recreation use within WSAs have removed vegetation and accelerated erosion in areas. Few impacts have occurred from fire management. Wilderness values have been affected based on fire suppression operations needed to control fire.

LWC – No known impacts have occurred from livestock grazing, wildlife, sensitive species, recreation and WHB management. Minerals, renewable energy, and lands and realty projects may affect wilderness characteristics within areas based on size and location of disturbance. Fire has removed vegetation and affected the quality of wilderness characteristics.

Reasonably Foreseeable Actions

WSAs – Impacts would be similar to those identified under the past and present analysis. No grazing may improve the wilderness experiences for some users.

LWC – Impacts would be similar to those identified under the past and present analysis.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

WSAs – incremental effects would be limited to recreation with improving visitor experiences for those seeking solitude or wilderness experiences. There would be no additional impacts from other resources and uses defined under past, present, and RFFAs.

LWC – Incremental impacts would be dependent to the amount of minerals, renewable energy, and ROWs development within land with wilderness characteristics. Overall impacts would remain low.

4.4.5 Watchable Wildlife Viewing Sites

Summary

In general, effects common to all alternatives involve actions that maintain or improve vegetation or wildlife habitat. Specific actions to achieve this are associated with most resources.

Overall, impacts on WWV sites would be limited since these sites are localized and most of them are in remote areas. In absolute terms, Alternatives C and D would have similar impacts on WWV sites, with some exceptions. Alternative C, Option 2 would provide additional protection to WWV sites because it would protect the areas from damage by livestock grazing, such as trampled vegetation. Compared to Alternatives C and D, Alternative B would provide fewer opportunities for protecting the special resources associated with these areas.

In relative terms, Alternatives B, C, and D differ in their degree of impact on WWV sites. The differences in degree of impact on WWV sites are detailed below under each alternative.

Methods of Analysis

Methods and Assumptions

To the extent practical, spatial data were used to compare the proposed management of each alternative to existing conditions. In absence of quantitative data, potential impacts from each alternative are based on interdisciplinary team knowledge of the resources and the planning area, and on information gathered from the public during the planning process. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate. Impacts were assessed according to the following assumptions:

- There would be an increase in use of BLM-administered land;
- The value of a watchable wildlife viewing site depends on the presence of healthy undisturbed habitat, composed of native vegetation, and on maintaining healthy, viable wildlife populations. Therefore, actions to improve any of these characteristics would indirectly benefit potential watchable wildlife viewing sites;
- Management actions that include vegetation treatment would indirectly improve the value of WWV sites for wildlife over the long term by improving ecosystem health and vegetation composition, structure, and diversity. These would be implemented by removing weeds, increasing native vegetation, and managing for a certain plant community composition. Weed removal, in particular, would reduce fuel loads and decrease the risk of catastrophic fire that would destroy vegetation and wilderness characteristics. However, these actions also would directly reduce wildlife habitat value over the short term by increasing human presence, vehicles, road use, and noise. Actions to limit vegetation treatments could prevent ecosystem health improvements in the long term but would minimize disturbance to certain areas in the short term; and
- Detailed analyses of impacts on habitats and wildlife from the varying degrees of alternative objectives and actions are provided in Section 4.2.5 (Vegetation—Forest/Woodland Products), Section 4.2.6 (Vegetation—Invasive and Noxious Species), Section 4.2.7 (Vegetation—Rangelands), Section 4.2.8 (Vegetation—Riparian Habitat and Wetlands), Section 4.2.9 (Fish and Wildlife), and Section 4.2.10 (Special Status Species).

Watchable Wildlife Viewing Sites: Effects from Air Quality Management

Effects Common to All Alternatives

Air quality protections would indirectly benefit ecosystems by reducing air pollution that could decrease plant vigor and make plants more susceptible to pest and disease outbreaks. This would foster a healthier ecosystem and would help to protect and preserve wildlife habitat near WWV sites. Any impacts would not be new.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WWV sites.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Impacts would be the same as those under Alternative A.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Watchable Wildlife Viewing Sites: Effects from Geology Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WWV sites.

Watchable Wildlife Viewing Sites: Effects from Soil Resources Management

Effects Common to All Alternatives

Soil erosion reduction measures, including seeding and improving vegetative cover, would reduce compaction and increase infiltration, indirectly improving ecosystem health over the short term. These impacts could extend into long-term benefits from increased vegetative productivity and improved habitat connectivity, which would attract wildlife to WWV sites. Any impacts would not be new.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WWV sites.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Impacts would be the same as those under Alternative A.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Watchable Wildlife Viewing Sites: Effects from Water Resources Management

Effects Common to All Alternatives

Effective watershed management, which minimizes erosion and maintains hydrologic flow and vegetative community health, would result in healthy and diverse plant communities, which in turn provide wildlife habitat, especially in riparian areas. Healthy watersheds improve fish habitat and

promote healthy fish populations. As such, WWV sites would benefit from effective watershed management.

Acquiring water rights that provide water to wildlife and acquiring water rights associated with in-stream flows would benefit wildlife since water is a crucial habitat component. This would improve WWV sites in the long term.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WWV sites.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Impacts would be the same as those under Alternative A.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Watchable Wildlife Viewing Sites: Effects from Vegetation—Forest and Woodland Products Management

Effects Common to All Alternatives

In all alternatives, forest and woodland products management actions, such as managing for pinyon pine and juniper woodlands, could increase human presence, noise, access roads, and short-term disturbance to forests. This would directly reduce the habitat value near WWV sites in these areas. However, forest management actions, including monitoring, establishing early warning systems for insect or disease outbreaks, and making special consideration for aspen, cottonwood, and mountain mahogany, and stand treatments, are tools that could be used to improve forest health and increase native species prevalence. This would indirectly increase habitat value and improve WWV sites over the long term. Any impacts would not be new.

The extent of forests and woodlands within the WD is limited, and WWV sites are localized. As such, impacts on WWV sites from forest and woodland product management actions would be limited and localized. Any impacts would not be new.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WWV sites.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Impacts would be the same as those under Alternative A.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Watchable Wildlife Viewing Sites: Effects from Vegetation—Invasive and Noxious Species Management

Effects Common to All Alternatives

Actions to decrease weeds on BLM-administered lands would indirectly improve ecosystem health by increasing native species and decreasing the risk of catastrophic wildfire in both the short term and long term. Such a fire could damage or kill native vegetation and allow the spread of weeds. As a result of these actions, wildlife habitat value near WWV sites would be increased over the long term. However, in the short term, human presence, roads, motorized vehicles, and machinery would directly decrease wildlife habitat value. Actions against weeds would have impacts similar to those described under Methods and Assumptions, above. Any impacts would not be new.

Further, coordination with agencies and implementation of BMPs would help minimize impacts on wildlife habitat near WWV sites over the long term. Any impacts would not be new.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WWV sites.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Impacts would be the same as those under Alternative A.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Watchable Wildlife Viewing Sites: Effects from Chemical and Biological Control

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WWV sites.

Watchable Wildlife Viewing Sites: Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

Improving degraded rangeland would reduce the prevalence of invasive species. This would reduce the risk of catastrophic wildfire on rangelands, which would destroy native vegetation and wildlife

habitats. With healthier native vegetation, wildlife habitat near WWV sites on rangelands would be improved over the long term. Any impacts would not be new.

Effects under Alternative A

FRCC would not be restored under this alternative, resulting in an increase in rangeland fire fuel load. This could put native vegetation at an increased risk of catastrophic fire, which would destroy wildlife habitat near WWV sites over the long term if it were to occur. Any impacts would not be new.

Effects under Alternative B

Restoration of FRCC to Class II levels would decrease fire fuel loads and could protect wildlife habitat near WWV sites from catastrophic fire over the long term.

Effects under Alternative C

Option 1

Impacts on WWV sites from rangeland management actions would be the same as those under Alternative B.

Option 2

Grazing prohibition would keep fuel loads high on the over three million acres that remain, increasing the risk of fire over the long term.

Effects under Alternative D

Impacts on WWV sites from rangeland management actions would be the same as those under Alternative B.

Watchable Wildlife Viewing Sites: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

Improving and maintaining meadows and riparian areas would increase human presence and access to these areas, degrading wildlife habitat near WWV sites over the short term. However, healthier native vegetation that would result from this improvement and maintenance would improve habitat value over the long term. Any impacts would not be new.

The extent of riparian and wetland areas within the WD is limited, and WWV sites are localized. As such, impacts on WWV sites from riparian and wetland management actions would be limited and localized. Any impacts would not be new.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WWV sites.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Impacts would be the same as those under Alternative A.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Watchable Wildlife Viewing Sites: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WWV sites.

Effects under Alternative A

Actions near nesting migratory birds would be restricted to minimize human and vehicle presence, noise, and other disturbance, which could limit public access and vegetation improvement treatments. This would have impacts similar to those described under Methods and Assumptions, above. However, these restrictions would also foster undisturbed habitat, which would improve WWV sites. Any impacts would not be new.

Effects under Alternative B

Reintroducing or transplanting big game species could improve WWV sites by attracting more visitors. However, these animals could directly and indirectly impact WWV sites by trampling, browsing, and spreading or introducing weeds, causing decreased plant vigor or plant mortality and altered stand composition. This would degrade wildlife habitat value for other wildlife species.

Under Alternative B, the fewest restrictions would be placed on actions near nesting migratory birds. This could limit public access or the type and timing of vegetation improvement treatments, which would have impacts similar to those described under Methods and Assumptions, above. Restrictions would foster undisturbed habitat, which would improve WWV sites.

Effects under Alternative C

Reintroducing or transplanting big game species could impact WWV sites in ways similar to Alternative B.

The most restrictions would be placed on actions near nesting migratory birds. This could place the most limits on public access or the type and timing of vegetation improvement treatments, which would have impacts similar to those under Methods and Assumptions, above. Restrictions would have the greatest impact in fostering undisturbed wildlife habitat, which would improve WWV sites.

Effects under Alternative D

Reintroducing or transplanting big game species could impact WWV sites in ways similar to Alternative A. Restrictions, similar to those described under Alternative A, would be placed on actions near nesting migratory birds.

Watchable Wildlife Viewing Sites: Effects from Special Status Species Management

Effects Common to All Alternatives

Special status species management across all alternatives would prevent activities leading to listing of species and would require plant inventories, sage-grouse, pygmy rabbit, bat, and raptor avoidance and mitigation and monitoring. Avoiding actions that impact listed or sensitive species or their habitat could limit WWV site use by prohibiting human presence and noise in certain areas. This also could preclude implementing treatments that would improve ecosystem health and plant community composition. Impacts would vary with the type of treatment proposed and the nature and extent of the restrictions. However, restrictions would help to recover the species, thus increasing the number and type of species available for viewing at the WWV site in the long term. Any impacts would not be new.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WWV sites.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Impacts would be the same as those under Alternative A.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Watchable Wildlife Viewing Sites: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

Managing WHB within HMAs and HAs could impact wildlife habitat near WWV sites by concentrating soil compaction and browsing into defined areas. This would concentrate such impacts as noxious weed invasion and plant reduction in certain areas, while preventing impacts in other areas. Any impacts would not be new.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WWV sites.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Impacts would be the same as those under Alternative A.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Watchable Wildlife Viewing Sites: Effects from Wildland Fire Management

Effects Common to All Alternatives

Wildfire suppression would prevent catastrophic destruction of vegetation and would preserve wildlife habitat near WWV sites over the long term. Minimum impact suppression tactics would minimize unanticipated effects on wildlife habitat during fire suppression. Wildfire may destroy wildlife habitat rendering Wildlife Viewing Areas not effective and requiring relocation.

Fuels management actions would reestablish native vegetation communities, providing for healthy vegetation and wildlife habitat over the long term. These actions would reduce the likelihood of catastrophic wildfire, which would protect habitat near WWV sites over the long term. Any impacts would not be new.

Implementing a response to wildfires, based on social, legal, and ecological consequences of the fire, would protect wildlife habitat near WWV sites from catastrophic fire over the long term. Any impacts would not be new.

Overall, fire management would help to improve wildlife habitat, making WWV sites more attractive to wildlife, which could increase visitor use of these areas.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WWV sites.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Impacts would be the same as those under Alternative A.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Watchable Wildlife Viewing Sites: Effects from Cultural Resources Management***Effects Common to All Alternatives***

Protection of cultural resources, such as aspen art trees and groves, would prevent disturbance and fragmentation of forests, which would indirectly protect wildlife habitat. However, these protections may limit visitation or the type of vegetation improvement treatments that could be implemented; impacts would be similar to those described under Methods and Assumptions. These areas are small, relative to the total area of the WD, so impacts would be localized and would not be new.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WWV sites.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Impacts would be the same as those under Alternative A.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Watchable Wildlife Viewing Sites: Effects from Tribal Consultation***Effects Common to All Alternatives***

Consulting with tribes to identify culturally significant plants, important habitats, and traditional use locations would emphasize protection of natural resources. This would indirectly limit disturbance and improve wildlife habitat where identified areas occur near WWV sites over the long term. Any impacts would not be new.

Effects under Alternative A

There would be no impacts because there are no actions that are likely to affect WWV sites.

Effects under Alternative B

Impacts would be the same as those under Alternative A.

Effects under Alternative C

Impacts would be the same as those under Alternative A.

Effects under Alternative D

Impacts would be the same as those under Alternative A.

Watchable Wildlife Viewing Sites: Effects from Paleontological Resources Management***Effects Common to All Alternatives***

There would be no impacts because there are no actions that are likely to affect WWV sites.

Watchable Wildlife Viewing Sites: Effects from Visual Resources Management***Effects Common to All Alternatives***

Implementing VRM guidelines would prevent disturbance and would protect wildlife habitat. However, VRM guidelines could increase the difficulty of accomplishing vegetation management actions by limiting the extent or effectiveness of restoration efforts, such as logging or thinning. This could prevent improvement of wildlife habitat near WWV sites. Any impacts would not be new.

Effects under Alternative A

Under Alternative A, 420,271 acres and 346,302 acres would be managed to VRM Class I and II guidelines, respectively. These actions would limit the scope of logging, thinning, or prescribed burning and would prohibit treatments and prescriptions that would change the visual character. Overall, meeting VRM Class I and II guidelines would increase the difficulty of improving wildlife habitat and would indirectly limit the extent or effectiveness of the management goals. Wildlife habitat would be protected as described under Effects Common to All Alternatives. Any impacts would not be new.

Effects under Alternative B

Under Alternative B, 417,605 acres and 391,203 acres would be managed to VRM Class I and II guidelines, respectively. This alternative is the least restrictive to disturbance near WWV sites. Impacts would be similar to those described under Alternative A.

Effects under Alternative C

Under Alternative C, 417,605 acres and 3,083,211 acres would be managed to VRM Class I and II guidelines, respectively. This alternative is the most restrictive to disturbance near WWV sites.

Effects under Alternative D

Under Alternative D, 417,605 acres and 2,780,416 acres would be managed to VRM Class I and II guidelines, respectively. Impacts would be similar in magnitude to those described under Alternative C.

Watchable Wildlife Viewing Sites: Effects from Cave and Karst Resource Management***Effects Common to All Alternatives***

There would be no impacts because there are no actions that are likely to affect WWV sites.

Watchable Wildlife Viewing Sites: Effects from Livestock Grazing Management

Effects Common to All Alternatives

Collecting monitoring data may help to improve rangelands and reduce the spread of weeds. This would, in turn, reduce the likelihood of catastrophic fire that would destroy native vegetation. As such, wildlife habitat near WWV sites would be protected, and any impacts would not be new.

Effects under Alternative A

Livestock grazing would continue to be allowed on 8,232,727 acres of land under this alternative, which would have the greatest impact on wildlife habitat. Grazing, including grazing on acquired lands, and range improvement actions would reduce fuel loads on these lands, making catastrophic fire less likely over the long term. This would indirectly allow for the maintenance and preservation of WWV sites within the WD. Any impacts would not be new.

Riparian areas would be protected, preventing impacts through soil compaction, vegetation trampling, and the introduction or spread of weeds. This would maintain plant vigor, stand composition, and fire regimes, which would indirectly improve wildlife habitat near WWV sites over the long term. Any impacts would not be new.

Effects under Alternative B

Impacts under Alternative B would be similar to those described under Alternative A.

Effects under Alternative C

Option 1

Livestock grazing would be allowed on 8,038,084 acres of land under this alternative, which would have slightly less of an impact than would Alternative B. Grazing and range improvement would reduce fuel loads, making catastrophic fire to WWV sites less likely over the long term. Grazing would not be permitted on acquired land, increasing the risk of fire in nearby WWV sites.

Greater protection would be given to riparian woodlands, requiring the restoration and maintenance of biological integrity in these areas. This would prevent impacts through soil compaction, vegetation trampling, and the introduction or spread of weeds and would maintain plant vigor, stand composition, and fire regimes. This would indirectly protect wildlife habitat near WWV sites over the long term.

Option 2

The no grazing option would not use livestock grazing to reduce fuel loads, increasing the risk of catastrophic fire in WWV sites. However, this alternative would give greater protection to riparian woodlands, as under Alternative C, Option 1.

Effects under Alternative D

Alternative D would have 8,016,754 acres of land open to grazing. Impacts would be similar to those described under Alternative A, except that fewer acres of land would be open to grazing.

Watchable Wildlife Viewing Sites: Effects from Minerals Management

Effects Common to All Alternatives

Impacts on WWV sites could result from fluid, leasable, and locatable mineral development and mineral material sales or disposal. Direct impacts associated with these actions include loss of or injury to plants due to excavation or trampling, toxic responses from use of chemicals in mineral extraction, and increased exposure to dust and other contaminants associated with construction and use of access roads. In the worst-case scenario, all vegetation would be removed from a parcel of land, and the site would be permanently altered so as to prevent future vegetative growth. This would degrade wildlife habitat near WWV sites.

Under all alternatives, BMPs would be implemented, and revegetation concurrent with the operation would be required, thus minimizing and mitigating impacts. Unnecessary roads would be closed to reduce fragmentation and restore habitat. In addition, special status species habitat would be avoided, thus protecting some WWV sites.

RFDs

Future actions based on reasonable development could result in indirect impacts. Future exploration and development could involve new structures, roads, and operations. These new structures, roads, and operations could be in areas where people live and work, where frequent recreation occurs, or where minimal nearby development exists.

Effects under Alternative A

Under Alternative A, the greatest amount of acreage would be open to leasable fluid and solid minerals activities and the fewest acres would be closed. Areas open to saleable mineral materials disposal would be subject to stipulations only on a case-by-case basis, which would likely result in less wildlife resource protection, which could reduce the value of WWV sites. Alternative A maintains the greatest amount of acreage to locatable minerals, with only minimal closures. Approximately 60 percent of the area open to locatable minerals would be subject to requirements for special handling and additional stipulations for wildlife resource protection. Alternative A would result in the greatest impacts from minerals management because it places the fewest restrictions on areas available for mineral development and the fewest restrictions on operations that could impact wildlife habitat and WWV sites.

Effects under Alternative B

Under Alternative B, fewer acres would be open to leasable fluid and solid minerals activities, and more acres would be closed than under Alternative A. Acreage that would be open to saleable mineral materials disposal is similar to Alternative A, but most of the area would be subject to standard authorization terms, which would likely result in greater wildlife habitat protection than under Alternative A. Impacts from saleable minerals management would be the same as those under Alternative A.

Effects under Alternative C

Under Alternative C, the fewest acres would be maintained for locatable minerals and leasable fluid and solid minerals activities, and the greatest number of acres would be closed. Acreage open to saleable mineral materials disposal would be less than under Alternatives A and B, and most of the area would be acres open solely to permitted government agencies. This would likely result in increased wildlife habitat protection from proper management and resource consideration in pursuing mineral interests. Overall, Alternative C would result in the least amount of impacts on WWV sites from minerals management. This is because Alternative C would close the most area to mineral development and would place the most restrictions to protect wildlife resources in areas available for mineral development.

Effects under Alternative D

Effects would be similar to those described under Alternative B, except more acres would be closed to mineral development and more acres of the public lands open to leasing would be subject to NSO stipulations and seasonal closures to protect wildlife and habitat. Alternative D would have the fewest acres open to saleable mineral materials disposal. Standard authorization terms and seasonal closures would be applied in some areas and would reduce impacts on wildlife and their habitats. Management actions would help to reduce impacts on WWV sites over the long term.

Watchable Wildlife Viewing Sites: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

Managing BLM-administered lands to provide dispersed recreation could directly degrade wildlife habitat near WWV sites throughout the WD through human disturbance, noise, weed introduction or spread, and impacts on vegetation. Impacts would vary, depending on the type of activities allowed in the area, and could be short term and long term. Any impacts would not be new.

To manage OHV use, the Transportation Plan would be updated and would account for special management areas, including WWV sites. Site-specific NEPA analysis would be done on an implementation level to minimize impacts on WWV sites.

Effects under Alternative A

Under Alternative A, there would be no camping limitations or prohibitions throughout the WD. In addition, the Pine Forest SRMA would be maintained, and issuance of special recreation permits would be the least restricted. The greatest acreage (6,789,612 acres) would be open to OHVs under Alternative A, with the least amount of land (423,786 acres) limited and with 17,698 acres closed. Combined, these actions would allow for disturbance to wildlife from increased human presence, OHV use, trail creation, and noise. This, in turn, could compact soils, trample vegetation, and increase dust, which could decrease plant vigor and alter stand composition of areas throughout the WD. As a result, wildlife habitat near WWV sites would be directly and indirectly degraded. Any impacts would not be new.

Effects under Alternative B

Camping limitations and prohibitions throughout the ERMA would minimize impacts on WWV sites on these lands. In addition, designating four SRMAs would impact WWV sites to varying degrees, depending on the proximity of the SRMA to the WWV site and on the recreation market identified for the SRMA. For example, the Nightingale SRMA would be targeted for undeveloped recreation-tourism, which would have less of an impact than Winnemucca and Pine Forest SRMAs, which allow for increased motorized vehicle access. The Granite Range SRMA is distant from all of the WWV sites and thus would have no impact. Under Alternative B, 1,460,200 acres would be open to OHVs, with the least amount of land (17,698 acres) closed and with 5,743,198 acres limited. Together, impacts from these actions include increased human and vehicle presence, noise, soil compaction, vegetation trampling, wildlife disturbance, and increased dust. These impacts could decrease plant vigor, alter stand composition, and degrade WWV sites throughout the ERMA, SRMAs, and OHV routes. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed.

Issuance of special recreation permits would be the least restrictive under this alternative, which could cause some impacts on WWV sites through increased human use, trampling, litter, and noise disturbance.

Effects under Alternative C

Camping limitations and prohibitions throughout the ERMA would minimize impacts on WWV sites on these lands. In addition, designating two SRMAs would have impacts on WWV sites similar to those described under Alternative B. Under Alternative C, no acres within the WD would be open to OHVs, with 43,521 acres closed and 7,187,575 acres limited. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. Impacts from recreation actions would be lowest under this alternative, as it is the most restrictive and prohibitive. However, impacts would occur that would be similar to those described under Alternative B.

Issuance of special recreation permits would be the most restrictive under Alternative C and would cause the least impact on WWV sites through increased human use, trampling, litter, and noise disturbance.

Effects under Alternative D

Camping limitations and prohibitions throughout the ERMA would minimize impacts on WWV sites on these lands. In addition, designation of four SRMAs would have the same impacts on WWV sites as those described under Alternative B. Under Alternative D, 288,105 acres would be open to OHVs, with 17,577 acres closed and with 6,925,414 acres limited. To minimize impacts, the BLM would limit OHV use to existing roads and trails until the Transportation Plan is updated and site-specific NEPA analysis is completed. Together, impacts from these actions would be similar to those described under Alternative B.

Issuing special recreation permits would cause some impacts on WWV sites through increased human use, trampling, litter, and noise disturbance.

Watchable Wildlife Viewing Sites: Effects from Renewable Energy Management

Effects Common to All Alternatives

Impacts on WWV sites could occur with issuance of new ROWs, which require vegetation clearing and access roads and would increase human presence, machinery, noise, weed potential, and habitat fragmentation. Over the long term, this could degrade wildlife habitat value if development occurs near WWV sites. BMPs, stipulations, and mitigation measures would be implemented to minimize impacts. Any impacts would not be new.

Effects under Alternative A

Maintaining existing exclusion areas within the WD would protect and limit disturbance to vegetation and habitat and would prevent noxious weed invasion or spread caused by development. Over the long term, this would protect wildlife habitat where exclusion areas encompass WWV sites. Any impacts would not be new.

Effects under Alternative B

Designating avoidance areas within the WD would protect and limit disturbance to vegetation and habitat and would prevent noxious weed invasion or spread caused by development. Over the long term, this would protect wildlife habitat where avoidance areas encompass WWV sites.

Effects under Alternative C

Designating avoidance areas and exclusion zones within the WD would have the greatest impact on WWV sites by protecting and limiting disturbance to vegetation and habitat and by preventing noxious weed invasion or spread. Over the long term, this would protect wildlife habitat where avoidance areas and exclusion zones encompass WWV sites.

Effects under Alternative D

Designating avoidance areas and exclusion zones within the WD would impact WWV sites by protecting and limiting disturbance to vegetation and habitat and by preventing noxious weed invasion or spread. Over the long term, this would protect wildlife habitat where avoidance areas and exclusion zones encompass WWV sites.

Watchable Wildlife Viewing Sites: Effects from Transportation and Access Management

Effects Common to All Alternatives

Maintaining roads necessary for fire suppression would allow for increased human presence, noise, and access to certain areas, which would degrade wildlife habitat near WWV sites. However, roads would allow for suppression of wildfires when necessary, which would protect native vegetation and wildlife habitat over the long term. Any impacts would not be new.

Vegetation improvement actions, such as noxious weed control measures, would have impacts similar to those described under Methods and Assumptions, at the beginning of this chapter. Any impacts would not be new.

Effects under Alternative A

Transportation actions under Alternative A would not protect wildlife, sensitive species, or their habitats. As a result, wildlife habitat near WWV sites could be impacted by road and trail construction from vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased dust and noise. Any impacts would not be new.

Effects under Alternative B

Transportation actions to minimize effects on wildlife, sensitive species, and habitat would protect and limit disturbance to vegetation and habitat and would prevent noxious weed invasion or spread from road or trail construction. This would protect wildlife habitat near WWV sites over the long term.

Effects under Alternative C

Impacts would be similar to those described under Alternative B.

Effects under Alternative D

Impacts would be similar to those described under Alternative B.

Watchable Wildlife Viewing Sites: Effects from Lands and Realty Management

Effects Common to All Alternatives

Vegetation and wildlife habitat value would be given consideration when the WD makes disposal and acquisition decisions, which could indirectly protect wildlife habitat near WWV sites over the long term. Any impacts would not be new.

Effects under Alternative A

Issuance of ROWs would not be limited, and avoidance areas or exclusion zones for lands and realty management actions would not be designated under Alternative A. Wildlife habitat near WWV sites could be directly impacted from vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased dust and noise. Any impacts would not be new.

Effects under Alternative B

Designating avoidance areas would have impacts similar to the renewable energy management actions under Alternative B.

Lack of restriction on ROW issuance could directly impact wildlife habitat near WWV sites via vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased noise and dust. This would degrade WWV sites over the long term.

Effects under Alternative C

Designating avoidance areas and exclusion zones would have impacts similar to renewable energy management actions under Alternative C.

Restricting ROW issuance could directly impact wildlife habitat near WWV sites by protecting and limiting vegetation disturbance, habitat fragmentation, and noxious weed invasion or spread from road construction.

Effects under Alternative D

Designating avoidance areas and exclusion zones would impact wildlife habitat near WWV sites by protecting and limiting disturbance to vegetation and habitat and by preventing noxious weed invasion or spread.

Lack of restriction on ROW issuance could directly impact wildlife habitat near WWV sites through vegetation removal, soil compaction, habitat disturbance and fragmentation, and increased noise and dust.

Watchable Wildlife Viewing Sites: Effects from ACEC/RNA Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WWV sites.

Watchable Wildlife Viewing Sites: Effects from Backcountry Byways Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WWV sites.

Watchable Wildlife Viewing Sites: Effects from National Historic Trails Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WWV sites.

Watchable Wildlife Viewing Sites: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

Because no existing or proposed WWV sites fall within the NWSRS eligible river corridors, there would be no impacts on WWV sites from WSR management under any of the alternatives.

Watchable Wildlife Viewing Sites: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WWV sites.

Watchable Wildlife Viewing Sites: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

WWV sites would provide educational opportunities for viewing wildlife and associated habitat. Human use of WWV sites could degrade nearby wildlife habitat in the long term by increasing noise and trampling vegetation.

Effects under Alternative A

Impacts would be the same as those under Effects Common to All Alternatives.

Effects under Alternative B

Impacts would be the same as those under Effects Common to All Alternatives.

Effects under Alternative C

Alternative C would provide additional protection to wildlife habitat by avoiding new routes through sensitive or remote areas. This would help to maintain relatively undisturbed wildlife habitat, which would enhance WWV sites.

Effects under Alternative D

Impacts would be the same as those under Effects Common to All Alternatives.

Watchable Wildlife Viewing Sites: Effects from Public Health and Safety Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WWV sites.

Watchable Wildlife Viewing Sites: Effects from Sustainable Development Management

Effects Common to All Alternatives

There would be no impacts because there are no actions that are likely to affect WWV sites.

Watchable Wildlife Viewing: Cumulative Effects

Past and Present Actions

There have been no discernible impacts from past and present impacts from livestock grazing to watchable wildlife viewing areas. Viewing areas would increase public visitation which may affect range improvements or movement of livestock. There would be few mineral and energy development impacts as viewing areas would be located away from operational areas. There are no impacts on special status species management and WHB. Recreation impacts include opportunities to view wildlife along with opportunities for educational experiences.

Reasonably Foreseeable Actions

Impacts would be similar to those identified in the past and present analysis.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Incremental effects would be minimal to watchable wildlife viewing. There would be no impacts from other resources and uses defined under past, present, RFFAs.

4.5 SOCIAL AND ECONOMIC

4.5.1 Tribal Interests

Summary

This section presents potential effects from management actions on Native American tribal economic interests, such as Indian Trust Assets (ITAs), treaty-based rights, and reservation lands. Indian trust resources are legal interests in assets held in trust by the federal government for federally recognized Indian tribes or nations or for individual Indians. These assets can be real property, physical assets, or intangible property rights. The planning area includes the Lovelock Paiute Colony, Fort McDermitt Reservation, Battle Mountain Reservation, Summit Lake Reservation, and Winnemucca Colony. Impacts on Native American values, traditional uses, and traditional cultural properties are discussed in Section 4.2.13, Cultural Resources.

Overall socioeconomic effects from management actions are discussed in Section 4.5.3, Social and Economic Conditions and Environmental Justice. Effects on tribal economic interests on reservation lands are likely similar to those of other residents in rural low-income parts of the planning area. Under Alternatives C and D, on congressional approval, lands would be transferred to the Bureau of Indian Affairs for the expansion of the Fort McDermitt Indian Reservation. Expansion of the reservation land base may permit additional economic development and income to the reservation.

Table 4-49 identifies the indicators that were used to analyze effects on tribal interests.

Table 4-49
Summary of Effects on Tribal Interests—Alternatives A, B, C, and D

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
The extent that the action affects Indian Trust Assets or treaty-based rights	No Change	No Change	No Change	No Change
The extent that the action affects reservation economic development	No Change	No Change	Increased Land Base	Increased Land Base

Source: Based on alternative management actions as described in Chapter 2.

Methods of Analysis

Methods and Assumptions

Tribal interests considered in this analysis are based on economic rights established by treaty and the unique trust relationship between tribes and the federal government. The federal trust responsibility includes the obligation to protect tribal lands, trust assets, and treaty-based rights.

There are no assets in the WD that are formally held in trust for tribes by the BLM, nor are there treaty-based rights to resources on lands managed by the WD. The Bureau of Indian Affairs administers 22,298 acres of reservation land within the WD.

General effects on tribal economic interests on reservation lands are likely similar to those of other residents in rural low-income parts of the planning area, as described in Section 4.5.3, Social and Economic Conditions and Environmental Justice.

Cultural and traditional tribal uses of the WD include gathering and harvesting plants, medicines, material, hunting, fishing, and ceremonial and religious use. Effects on traditional cultural properties, sacred sites, culturally important natural resources, traditional practices, and tribal access are discussed in Section 4.2.13, Cultural Resources.

The BLM, as a federal agency, would continue to maintain government-to-government relationships with federally recognized Indian tribes and would consult with tribes during resource management planning affecting tribal lands and resources.

Tribal Interests: Effects from Air Quality Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Geology Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Soil Resources Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Water Resources Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Vegetation—Forest/Woodland Products Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Vegetation—Invasive and Noxious Species Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Chemical and Biological Control

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Vegetation - Rangeland Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Vegetation—Riparian and Wetlands Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Special Status Species Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Wildland Fire Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Cultural Resources Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Tribal Consultation

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Paleontological Resources Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Visual Resources Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Cave and Karst Resources Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Livestock Grazing Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Minerals Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Renewable Energy Management

Effects Common to All Alternatives

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Transportation and Access Management***Effects Common to All Alternatives***

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Lands and Realty Management***Effects Common to All Alternatives***

There would be no effects common to all alternatives from lands and realty management.

Effects under Alternative A

Under Alternative A there would be no effect on Indian Trust Assets or treaty-based rights. The reservation land base would not be expanded as it would under Alternatives C and D. The reservation would not benefit from any economic development and income that a larger land base may permit.

Effects under Alternative B

Under Alternative B there would be no effect on Indian Trust Assets or treaty-based rights. The reservation land base would not be expanded as it would under Alternatives C and D. The reservation would not benefit from any economic development and income that a larger land base may permit.

Effects under Alternative C

Under Alternative C, on congressional approval, the BLM would transfer lands to the Bureau of Indian Affairs for expanding the Fort McDermitt Indian Reservation. Expanding the reservation land base may permit additional economic development of and income to the reservation.

Effects under Alternative D

Under Alternative D, on congressional approval, the BLM would transfer lands to the Bureau of Indian Affairs for expanding the Fort McDermitt Indian Reservation. Expanding the reservation land base may permit additional economic development of and income to the reservation.

Tribal Interests: Effects from ACEC/RNA Management***Effects Common to All Alternatives***

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Backcountry Byways Management***Effects Common to All Alternatives***

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from National Historic Trails Management***Effects Common to All Alternatives***

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Wild and Scenic Rivers Management***Effects Common to All Alternatives***

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management***Effects Common to All Alternatives***

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Watchable Wildlife Viewing Sites Management***Effects Common to All Alternatives***

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Public Health and Safety Management***Effects Common to All Alternatives***

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Effects from Sustainable Development Management***Effects Common to All Alternatives***

None; there are no ITAs or treaty-based rights present that would be affected.

Tribal Interests: Cumulative Effects***Past and Present Actions***

From contacts with settlers, disease and alcohol have decimated Northern Paiute and Western Shoshone population groups. Further, past historical actions have served to drive the Northern Paiutes off the land, confine them to reservations, and further destroy their traditional culture. Only in the past 50 years has an attempt been made by the federal and state governments to undo some of these actions.

Continued livestock grazing has the potential to provide jobs to tribal members, but grazing has the potential to impact plants that are of concern to Native Americans. Minerals, renewable energy, and lands and realty actions would continue to provide jobs, income and growth to local economies, but these actions have the potential to adversely impact traditional cultural properties and archaeological sites that may have significance to tribal members. Recreation use may affect trespass on tribal lands.

There are few impacts associated with tribal interest that have occurred from wildlife, special status species, and WHB management. Placement of fuelbreaks has helped to protect traditional use areas from fire.

Reasonably Foreseeable Actions

Impacts would be similar for livestock grazing, recreation and WHB management. No grazing would reduce the potential for economic growth in local communities, but could possibly help preserve plants important to the Native Americans. Minerals, renewable energy, and ROWs development would increase the economic base of communities, but reservations and colonies being outside of towns, would see little or no impacts. As projects occur in these areas, there would be the potential of jobs for Native Americans. Mining would continue boom/bust economic cycles based on commodity prices. Priority wildlife habitat and watershed areas would protect areas traditionally used by Native Americans due to use restrictions. Impacts would vary based on the number of acres designated.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Few impacts would occur to tribal interests from livestock grazing, recreation, WHB and fire management. Impacts associated with Minerals, renewable energy, and lands and realty would improve and stimulate economics provide opportunities for additional jobs, and services for the tribes. Projects in these areas could also adversely impact traditional cultural properties and prehistoric sites held important by Native Americans. Impacts would vary by size and location of projects.

Wildlife and Sensitive species Management would reduce potential for certain uses, reducing economic growth potential but would help maintain the character of traditional use areas.

4.5.2 Public Health and Safety

Summary

Nearly all management activities on the WD lands could affect public safety to some extent. The main goal for public safety as a resource is to protect people from natural or human-caused hazards encountered on public lands. Essentially, any management activity that improves access to or encourages use of BLM-administered lands also increases the likelihood that the public and BLM employees could come into contact with abandoned mine lands, modern mine pits, high walls and pit lakes, hot springs, and hazardous material sites, including solid waste, illegal dump sites, and unexploded ordinance or explosives. However, improving access in the resource area could reduce the number of accidents that result from poor travel conditions. Reducing access could hinder efforts to identify, remediate, and monitor hazardous sites. The proposed public safety management plan is concerned with identifying, tracking, and protecting the public from exposure to hazardous conditions, as well as taking corrective action on sites where those conditions occur.

The Nevada BLM initiated the Abandoned Mine Lands Program to remediate physical safety hazards. These hazards result from historic mining activity, historic watershed and chemical contamination sites, such as old mill sites or tailings impoundments, and modern mines and mill

sites that have insufficient reclamation bonding and have been abandoned or become bankrupt. Current management works under the Abandoned Mine Lands Program to remove or remediate dangerous situations and materials when discovered. Remediation of abandoned mine hazards are prioritized by the potential for public exposure through access and proximity to populated areas and recreational uses. Increased public exposure to abandoned mine lands hazards would increase the priority to remediate those hazards in a timely manner. All alternatives would continue this work and add procedures and safeguards for hazardous sites, including removing hazards, protecting significant sites, and stabilizing or limiting accessibility of abandoned mine lands and other hazardous sites when removal of hazards is not practical. Alternative C has some added restrictions associated with recreation, visitor outreach and services management, geology management, and chemical and biological control of vegetation management, on abandoned mine lands and hazardous sites. These restrictions exceed those under Alternatives A and B and are nearly the same as those under Alternative D. Long-term management of completed projects would include periodic maintenance and monitoring to determine success and stability of these measures.

The WD provides for public safety at hot springs by posting and maintaining warning signs at dangerous hot springs with temperatures above 100 degrees Fahrenheit. Hot springs with temperatures above 120 degrees Fahrenheit are fenced and posted to limit entry and to warn the public of the hazards.

Methods of Analysis

Methods and Assumptions

The alternatives were reviewed for actions that would affect the public health and safety from exposure to hazardous sites, including naturally occurring hazards on abandoned mine lands, modern mining pits, and pit lakes, based on the following assumptions:

- The population of the western United States will continue to increase and will likely result in a corresponding increased demand for accessible, open-space recreational use of the WD planning area. Certain special use events, such as Burning Man, will continue to attract visitors from outside the region;
- Increased use or improved access will result in increased exposure to abandoned mine lands, hot springs, hazardous material or illegal dump sites, exposure to modern mining operations and other hazards, such as explosives or unexploded ordinance;
- Increased exposure to hazardous sites will require reprioritization of remediation for abandoned mine lands or other hazardous sites;
- SOPs and BMPs are in place for the use of chemical and biological controls for vegetation treatments and wildlife damage management;
- Promotion of the areas within the WD as vacation and outdoor recreational destinations by certain interested parties will continue and potentially will result in an increasing number of visitors encountering hazards on public lands; and
- Interest in mineral extraction on public lands within the WD will persist.

Public Health and Safety: Effects from Air Quality Management***Effects Common to All Alternatives***

Air quality management objectives would generally provide for public health and safety by minimizing airshed degradation. BMPs are incorporated into remedial actions at abandoned mine lands and other hazardous sites to minimize impacts on air quality. The air quality program would have little bearing on ground-disturbing remediation activities in terms of fugitive dust and other emissions.

Public Health and Safety: Effects from Geology Management***Effects Common to All Alternatives***

There would be no effects common to all alternatives from geologic resource management.

Effects under Alternative A

There are no actions under this alternative that would affect public health and safety.

Effects under Alternative B

Alternative B, promotes distribution of scientific and educational information regarding visiting and protecting unique geological features. Increased access to public lands increases the likelihood of exposure to health and safety risks at abandoned mine lands and other hazardous sites that may be located near geologic features. However, increased public exposure to abandoned mine hazards would increase the priority to remediate those hazards.

Effects under Alternative C

Alternative C would not promote scientific, educational, and recreational use and access to unique geological features with the development of recreational trails. Under these options, such media as pamphlets and news releases encouraging protection of unique geologic resources on public land would be made available without encouraging visitation. Increased access to public lands increases the likelihood of exposure to health and safety risks at abandoned mine lands, hazardous materials sites, and other hazardous sites. However, increased public exposure to abandoned mine hazards would increase the priority to remediate those hazards.

Effects under Alternative D

Under Alternative D, the WD would not distribute information or pamphlets regarding geological features. Under this alternative these areas would be designated as eligible for National Natural Landmarks. Such designation may increase visitor usage, in which case any potential hazards associated with such visits or encountering abandoned mines in the area may increase.

Public Health and Safety: Effects from Soil Resources Management***Effects Common to All Alternatives***

Soils management could have a measurable impact on public safety. Actions that specify the avoidance of sensitive land types, which would include some abandoned mine lands and hazardous sites, would be protective of public safety. For example, wind erosion can have a major impact on public safety and transportation corridors because burned areas are often near or surround transportation corridors such as Interstate 80, State Highways 95 and 140. Fatal vehicle accidents have occurred from reduced visibility. Windblown soil has resulted in temporary closures of the Interstate and highways affecting transportation of commodities and interstate commerce. Implementing BMPs for projects that entail soil-disturbing activities under erosion protection, site stabilization, and better vegetative cover would reduce exposure and movement of contaminated soils and also would reduce runoff and flood potential. Soils management would be an intrinsic part of the mitigative and remediable ground-disturbing activities of the abandoned mine lands and hazardous sites.

Public Health and Safety: Effects from Water Resources Management***Effects Common to All Alternatives***

Water resources management goals and objectives would complement hazardous site cleanup efforts across alternatives. Watershed and stream improvements would reduce the potential for erosion and migration of contaminants. Alternatives B, C, and D would have greater potential to help improve watershed health. Actions to maintain, improve, and restore water quality, including compliance with state and federal standards and regulations to protect watersheds and continued implementation of BMPs, would be applicable to the remediative and restorative programs for abandoned mine lands and hazardous sites.

Public Health and Safety: Effects from Vegetation—Forest/Woodland Products Management***Effects Common to All Alternatives***

Fuels reduction with a more resilient forest, similar to historic conditions, would help ensure public safety from the standpoint that the public would be less likely to be injured by wildfire. Harvesting of wood products would reduce the risk of wildfire to communities, private property, and injury to the public. However, forest management actions could cause undesirable ground disturbance on or around abandoned mine lands and hazardous materials sites. The potential for impacts due to risks associated with exposure to mine hazards and hazardous materials depends on the amount of timber harvested, which would vary by alternative.

Public Health and Safety: Effects from Vegetation—Invasive and Noxious Species Management***Effects Common to All Alternatives***

Weeds management would affect public safety. The invasive species and noxious weeds program could help control weeds in and around these types of sites. However, the removal of such flora

without rapid implementation of other measures could further impact on-site and off-site conditions through release of airborne soil and disturbance of sediments. Weed control is part of public safety cleanup and follow-up efforts. The revegetation of areas treated for weeds would complement the objectives of the abandoned mine lands and hazards remediation.

Public Health and Safety: Effects from Chemical and Biological Control

Effects Common to All Alternatives

Chemical and biological weed control could cause short-term impacts on public health and safety. SOPs and BMPs are in place governing the use of chemical and biological controls. An approved pesticide use proposal is required before applying pesticides on public lands or as provided by current policy to reduce effects on public safety.

Effects under Alternative A

No pesticides or herbicides would be applied to streams, lakes, or reservoirs unless adverse impacts could be adequately mitigated. Access to lands and water with applied pesticides could affect public safety. An approved pesticide use proposal is required before applying pesticides on public lands or as provided by current policy to reduce the effects on public safety. SOPs, BMPs, or mitigation measures would be employed to ensure terrestrial and aquatic pesticides are appropriate for the intended target, place of use, and method of application and to do it in a manner that would avoid unintended effects.

Effects under Alternative B

Alternative B calls for various integrated pest management techniques, such as pesticides and mechanical and biological controls, to control pests. Increased visitor populations and access to lands and water with applied pesticides could affect public health and safety. An approved pesticide use proposal is required before applying pesticides on public lands, or as provided by current policy, to reduce the effects on public health and safety. SOPs, BMPs, or mitigation measures would be employed to ensure terrestrial and aquatic pesticides are appropriate for the intended target, place of use, and method of application and to ensure that they are implemented in a manner that would avoid unintended effects.

Effects under Alternative C

Alternative C includes the use of various integrated pest management techniques, such as mechanical and biological, for pest control. Methods other than chemical treatments are to be used to minimize adverse impacts on wildlife, other animals, and the public, based on Action C-PE 1.1 in Chapter 2. SOPs, BMPs, or mitigation measures would be employed to ensure terrestrial and aquatic pesticides are appropriate for the intended target, place of use, and method of application and to ensure that they are implemented in a manner that would avoid unintended effects.

Effects under Alternative D

Impacts would be the same as those described under Alternative B.

Public Health and Safety: Effects from Vegetation—Rangeland Management***Effects Common to All Alternatives***

The lack of vegetation on abandoned mine lands and other hazardous sites may not be affected by improving rangeland conditions, which would affect site stability and public safety on sites that have been overgrazed.

Public Health and Safety: Effects from Vegetation—Riparian and Wetlands Management***Effects Common to All Alternatives***

Some abandoned mine lands and hazardous materials sites have limited vegetation that could add to sediment load or contamination of streams. All the alternatives would improve streams and establish riparian habitat buffers that help remove and store contaminants generated by abandoned mine lands and hazardous materials sites. The differences among alternatives would not result in measurable impacts on public safety.

Public Health and Safety: Effects from Fish and Wildlife Management***Effects Common to All Alternatives***

The Fish and Wildlife Management objectives to restore, protect, and improve wildlife habitat by using management tools, including prescribed fire and wildfire use, vegetation manipulation (mechanical, biological, and chemical treatments), seeding, fencing and use restrictions, could affect public health and safety. Effects on public safety would be similar to those of wildland fire management and vegetation management objectives because similar management tools would be used. Conserving and restoring fish, waterfowl and shorebird habitats would improve water quality, thereby enhancing public health. Moreover, it would promote actions that achieve good quality aquatic and riparian habitats. The differences among alternatives would not result in measurable impacts on public safety.

Public Health and Safety: Effects from Special Status Species Management***Effects Common to All Alternatives***

The special status species management objectives work in conjunction with the objectives of public safety management. Protecting sensitive species habitat by implementing mitigation measures to reduce adverse impacts could reduce the amount of contact the public has with abandoned mine lands and hazardous sites and therefore protect public safety. Mitigation measures include avoidance, no surface occupancy, buffer zones, seasonal restrictions, off-site mitigation, use restrictions, and rehabilitation. The differences among alternatives would not result in measurable impacts on public safety.

Public Health and Safety: Effects from Wild Horse and Burro Management***Effects Common to All Alternatives***

WHB grazing could impact public health and safety where grazing animals gain access to disturbed sites, resulting in increased site disturbance. Grazing could also reduce or degrade vegetation used to

stabilize conditions on or near abandoned mine lands and other hazardous materials sites. Range improvements also could disturb hazardous materials, as could weed control efforts. Many abandoned mine lands and hazardous materials sites have limited vegetation, so improving rangeland conditions would affect site stability and public safety if overgrazing had occurred. Improving watershed conditions would help protect such sites as contaminated floodplains. Improved range management can also improve and control access, which can also help protect the public from hazard conditions. Impacts would depend on the character of specific allotments. Overall, impacts from WHB grazing management on public health and safety would not affect long-term rehabilitation and stability of sites.

Public Health and Safety: Effects from Wildland Fire Management

Effects Common to All Alternatives

Wildfire management under all alternatives would affect public safety by reducing the likelihood that the public would be injured by wildfire. The FMPs would help protect abandoned mine lands remediation projects across alternatives.

Public Health and Safety: Effects from Cultural Resources Management

Effects Common to All Alternatives

Cultural resources management could preserve old mine structures, which could threaten public safety because of chemical and physical hazards. Such inventories would aid in abandoned mine lands and hazardous site identification.

Public Health and Safety: Effects from Tribal Consultation

Effects Common to All Alternatives

Native American tribal uses could impact public safety across alternatives by encouraging Native Americans to access traditional use areas for collecting, hunting, and other traditional uses, which could also expose them to hazardous sites.

Public Health and Safety: Effects from Paleontological Resources Management

Effects Common to All Alternatives

No actions for paleontological resources management would affect public health and safety.

Public Health and Safety: Effects from Visual Resources Management

Effects Common to All Alternatives

No actions from visual resources management would affect public health and safety.

Public Health and Safety: Effects from Cave and Karst Resources Management***Effects Common to All Alternatives***

The objective of cave and karst management is to protection unique geologic features, to promote public safety, and to protect wildlife habitat. While Alternative C would not identify undiscovered sites or promote increased visitation, all alternatives would provide public education about cave and karsts. Increased education would decrease public safety concerns associated with caves and karsts.

Effects under Alternative A

See Effects Common to All Alternatives.

Effects under Alternative B

An inventory would be completed under Alternatives B to identify significant cave and karst resources. Such an inventory would aid in abandoned mine lands and hazardous site identification.

Effects under Alternative C

An inventory would be completed under Alternatives C to identify significant cave and karst resources. Such an inventory would aid in abandoned mine lands and hazardous site identification.

Effects under Alternative D

An inventory would be completed under Alternatives D to identify significant cave and karst resources. Such an inventory would aid in abandoned mine lands and hazardous site identification.

Public Health and Safety: Effects from Livestock Grazing Management***Effects Common to All Alternatives***

Livestock grazing could impact public health and safety where grazing animals gain access to disturbed sites, resulting in increased site disturbance. Grazing could also reduce or degrade vegetation used to stabilize conditions on or near abandoned mine lands and other hazardous materials sites. Range improvements also could disturb hazardous materials, as could weed control efforts. Many abandoned mine lands and hazardous materials sites have limited vegetation, so improving rangeland conditions would affect site stability and public safety where overgrazing has occurred. Improved range management could also improve and control access, which could help protect the public from hazardous conditions. Impacts would depend on the character of specific allotments. Alternative C, Option 2 would not allow grazing, unlike the rest of the alternatives, and could increase abandoned mine lands and hazardous materials site natural vegetation and site stability by restricting grazing. Overall, impacts from livestock grazing management on public health and safety would not affect long-term rehabilitation and stability of sites.

Public Health and Safety: Effects from Minerals Management***Effects Common to All Alternatives***

Minerals management would impact public safety and the efforts of the abandoned mine lands programs. The maintenance of corrective actions and needed remediation of physical and chemical hazards at abandoned mine lands sites that are later claimed under the mining law, would become the responsibility of the mining claimant. The efforts of the claimants to secure hazardous conditions on active claims would reduce the workload of the abandoned mine lands program. Modern mining operations on abandoned mine lands could eliminate the associated hazards through mining or processing and could improve public health and safety. Insufficiently bonded modern mining sites that are abandoned or affected by bankruptcy would impact public safety and the efforts of the abandoned mine lands programs by adding the need for physical safety closures or environmental cleanup measures to eliminate any remaining physical or chemical hazards. All mineral operations must meet applicable worker public health and safety standards.

Effects under Alternative A***Saleable***

Alternative A would continue to limit public exposure to physical and chemical hazards resulting from saleable mineral extraction to the resource area outside the 418,938 acres maintained as closed to mineral material disposal.

Fluid

Alternative A would continue to limit public exposure to physical and chemical hazards resulting from fluid mineral extraction 446,887 acres maintained as closed to fluid mineral leasing. Under Alternative A, 29,582 acres would continue to be open to leased fluid minerals activities with NSO stipulations, limiting physical hazards in those areas.

Solid

Alternative A continue to limit public exposure to physical and chemical hazards associated with solid minerals extraction to the resource area outside the 416,652 acres closed to solid mineral leasing.

Effects under Alternative B***Saleable***

Alternative B would limit public exposure to physical and chemical hazards associated with saleable mineral extraction to the resource area outside the 418,938 acres closed to mineral material disposal.

Fluid

Alternative B would limit public exposure to physical and chemical hazards associated with fluid mineral extraction to the resource area outside the 1,132,594 acres closed to fluid mineral leasing. Hazards not mitigated under previous mineral activities' permit and authorization conditions on areas previously open to fluid mineral leasing could exist. Under Alternative B, 221,724 acres would

be open to leased fluid minerals activities with NSO stipulations limiting physical hazards in those areas.

Solid

Alternative B would limit public exposure to physical and chemical hazards associated with solid mineral extraction to the resource area outside the 1,124,266 acres closed to leasing. Hazards not mitigated under previous mineral activities' permit and authorization conditions on areas previously open to solid mineral leasing could exist. Under Alternative B, 221,644 acres would be open to solid mineral leasing with NSO stipulations limiting physical hazards in those areas.

Effects under Alternative C

Saleable

Alternative C would limit public exposure to physical and chemical hazards associated with saleable mineral extraction to the resource area outside the 837,049 acres closed to mineral material disposal. Hazards not mitigated under previous mineral activities' permit and authorization conditions on areas previously open to saleable mineral disposal could exist.

Fluid

Alternative C would limit public exposure to physical and chemical hazards associated with fluid mineral extraction to the resource area outside the 4,455,028 acres closed to leasing. Hazards not mitigated under previous mineral activities' permit and authorization conditions on areas previously open to fluid mineral leasing could exist.

Solid

Alternative C would limit public exposure to physical and chemical hazards associated with solid mineral extraction to the resource area outside the 4,455,645 acres closed to leasing. Hazards not mitigated under previous mineral activities' permit and authorization conditions on areas previously open to solid mineral leasing could exist.

Effects under Alternative D

Saleable

Alternative D would limit public exposure to physical and chemical hazards associated with saleable mineral extraction to the resource area outside the 694,991 acres closed to mineral material disposal. Hazards not mitigated under previous mineral activities' permit and authorization conditions on areas previously open to saleable mineral disposal could exist.

Fluid

Alternative D would limit public exposure to physical and chemical hazards associated with fluid mineral extraction to the resource area outside the 1,740,928 acres closed to leasing. Hazards not mitigated under previous mineral activities' permit and authorization conditions on areas previously open to fluid mineral leasing could exist. Under Alternative D, 205,485 acres would be open to leased fluid minerals activities with NSO stipulations, limiting physical hazards in those areas.

Solid

Alternative D would limit public exposure to physical and chemical hazards associated with solid mineral extraction to the resource area outside the 1,740,930 acres closed to solid mineral leasing. Hazards not mitigated under previous mineral activities' permit and authorization conditions on areas previously open to solid mineral leasing could exist. Under Alternative D, 205,485 acres would be open to solid mineral leasing with NSO stipulations, limiting physical hazards in those areas.

Public Health and Safety: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

Increased recreational demand and use of public lands would increase the likelihood that the public could come into contact with health and safety risks at abandoned mine lands or other hazardous sites. SRMAs, which would be managed for intensive recreation use, increase this likelihood. However, increased public exposure to abandoned mine hazards would increase the priority to remediate those hazards. SRMA activity plans could include remedial actions or restrictions that help protect the public from hazards at abandoned mine lands and other hazardous sites where remedial action have not occurred. Recreation program maintenance, signage, and information efforts could help reduce exposure to physical hazards and other types of hazards that could not be mitigated. Recreation programs assist in collecting solid waste, which would mitigate illicit solid waste dumping. All alternatives except Alternative C have some acreage designated as open. This designation presents the greatest potential for encountering abandoned mine lands, hazardous materials sites, and other hazard sites.

Effects under Alternative A

Alternative A would continue managing existing SRMAs to provide dispersed recreation. Alternative A would continue to maintain current designations of OHV travel, including 17,698 acres closed to OHVs.

Effects under Alternative B

Alternative B would designate four SRMAs. The likelihood that the public could come into contact with abandoned mine lands or other hazardous sites would be increased in these SRMAs. An increase in public exposure would modify current priorities to mitigate abandoned mine hazards to high. Alternative B would increase public awareness of the ethics of responsible land and resource use and promote educational outreach programs, such as Tread Lightly! and Leave No Trace, through public contact, recreation, and tourism partners and the SRP system. Under Alternative B, 17,698 acres would be closed to OHV travel, and 1,460,200 acres would be open to OHV travel. Alternative B would close the fewest acres to OHV travel and could increase the likelihood of exposure to health and safety risks at abandoned mine lands, hazardous materials sites, and other hazard sites. The open designation presents the greatest potential for encountering abandoned mine lands and other hazardous sites.

Effects under Alternative C

Alternative C would designate two SRMAs. The likelihood that the public could come into contact with abandoned mine lands or other hazardous sites would be increased in these SRMAs. Alternative C would increase public awareness of the ethics of responsible land and resource use. These options would promote educational outreach programs, such as “Tread Lightly!” and “Leave No Trace”, through public contact, recreation, and tourism partners and the SRP system. However, Alternative C would not promote visitation of sensitive areas. Under Alternative C, 43,521 acres would be closed to OHV travel, zero acres would be open to OHV travel, and the rest would be designated for limited OHV use. Alternative C would close the most acres to OHV travel of the alternatives and could decrease the likelihood of exposure to health and safety risks at abandoned mine lands and other hazardous sites.

Effects under Alternative D

Alternative D would designate four SRMAs. The likelihood that the public could come into contact with abandoned mine lands or other hazardous sites would be increased in these SRMAs. Alternative D would increase public awareness of the ethics of responsible land and resource use and would promote educational outreach programs, such as Tread Lightly! and Leave No Trace, through public contact, recreation, and tourism partners, and the SRP system. Under Alternative D, 17,577 acres would be closed to OHV travel, 288,105 acres would be open to OHV travel, and the rest would be designated as limited OHV use. OHV travel could increase the likelihood of exposure to health and safety risks at abandoned mine lands and other hazardous sites.

Public Health and Safety: Effects from Renewable Energy Management

Effects Common to All Alternatives

The renewable energy program could affect public health and safety by improving access, thereby exposing the public to health and safety risks at abandoned mine lands sites and hazardous sites. Wind energy, solar energy, and biomass energy sites could present public safety hazards if not properly secured and maintained. Rights-of-way and leases for renewable energy development sites would contain stipulations to provide for public safety and for the continuation of abandoned mine lands and hazard site remediation.

Public Health and Safety: Effects from Transportation and Access Management

Effects Common to All Alternatives

The transportation and travel management program could affect public safety through inadvertently providing access to hazard sites and producing ground-disturbing activity on or near abandoned mine lands and other hazardous sites. However, increased public exposure to abandoned mine hazards would increase the priority to remediate those hazards. All alternatives would improve or decommission roads from the system inventory that are presenting problems to the environment, which could prevent public access to abandoned mine lands and hazardous sites with erosion issues. Improved access could impact public safety by reducing accidents that result from poor travel conditions. Reducing access could hinder efforts to identify, remediate, and monitor hazardous sites.

All alternatives would also provide for public safety awareness through sign installation and maintenance programs, while protecting the viewshed.

Public Health and Safety: Effects from Lands and Realty Management

Effects Common to All Alternatives

The lands and realty program could affect public health and safety through inadvertently providing access to hazardous sites, designating ROWs or authorizing ground-disturbing activity on or near hazardous sites, or authorizing development near hazardous sites. These possibilities are minimized with site inventories prior to granting ROWs. Rights-of-way would contain stipulations to provide for public safety. Environmental site assessments are required to identify health and safety risks at abandoned mine lands and hazardous sites before offering any public land for sale.

Public Health and Safety: Effects from ACEC/RNA Management

Effects Common to All Alternatives

No actions for ACEC/RNA management would affect public health and safety.

Public Health and Safety: Effects from Backcountry Byways Management

Effects Common to All Alternatives

Backcountry byways management could impact public health and safety across alternatives by increasing access and bringing the public into contact with abandoned mine lands and other hazardous sites, including mines, hazardous materials, solid waste, illegal dump sites, hot springs, and explosives.

Public Health and Safety: Effects from National Historic Trails Management

Effects Common to All Alternatives

No actions for National Historic Trails Management would affect public health and safety.

Public Health and Safety: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There would be no effects on public health and safety common to all alternatives that would result from actions for WSR management.

Effects under Alternative A

Under Alternative A there would be no impacts on public health or safety from WSR management.

Effects under Alternative B

Under Alternative B there would be no impacts on public health or safety from WSR management.

Effects under Alternative C

Because it is assumed that visitation would increase if the NWSRS eligible river segments were congressionally designated, the overall exposure of the public to naturally occurring safety hazards would increase at these sites under Alternative C. Comprehensive River Management Plans would address visitation increases and prescribe specific management actions to mitigate safety concerns where needed.

Effects under Alternative D

Under Alternative D there would be no impacts on public health or safety from WSR management.

Public Health and Safety: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

No actions for Wilderness Study Areas and Wilderness Characteristics Management would affect public health and safety.

Public Health and Safety: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Watchable wildlife viewing sites could impact public safety across alternatives by increasing access and bringing the public into contact with abandoned mine lands and other hazardous sites. However, increased public exposure to abandoned mine hazards would increase the priority to remediate those hazards.

Public Health and Safety: Effects from Public Health and Safety Management

Effects Common to All Alternatives

The Abandoned Mine Lands Program focuses on immediate and urgent threats to human health and the environment. Most of the hazardous materials issues are associated with illegal dumping, chemicals, unexploded ordnance or explosives, past mining activities, and abandoned mine lands. The following are management actions that could reduce BLM employees' and the public's health risk and exposure to abandoned mine lands sites, hazardous materials sites, solid waste sites, and other hazard sites:

- Continuing to work with the Abandoned Mines Program;
- Maintaining and improving inventories of abandoned mine lands sites and hazardous materials sites;
- Inspecting and mitigating physical and chemical hazards to ensure public safety;
- Prioritizing mitigation at sites where the risk of public exposure to hazards is increasing due to use or proximity to population growth;
- Correcting physical hazards and cleaning up and reclaiming hazardous sites;

- Using BLM personnel to investigate illegal dumping and enforce existing regulations;
- Educating the public through literature and BLM personnel with public contact about potential hazards and safe behavior on public lands;
- Safeguarding human health, preventing environmental damage, and limiting BLM liability from hazards by authorization actions on public lands; and
- Constraining or restricting, through law enforcement, regulations, and institutional controls, the activities of the public on public lands to ensure safety.

Public Health and Safety: Effects from Sustainable Development Management

Effects Common to All Alternatives

No actions for sustainable development management would affect public health and safety.

Public Health and Safety: Cumulative Effects

Past and Present Actions

No discernible impacts have occurred to public safety from livestock grazing, sensitive species management and WHB management. Minerals, renewable energy, and ROWs developments have posed additional risks to public safety due to public exposure to heavy equipment and additional vehicular traffic. Closing areas off by fencing reduces the potential for public access.

Recreation impacts on public health include; potential for injuries during search and rescue missions. Wildfire poses threat to public safety depending on location and spread of fire.

Reasonably Foreseeable Actions

Impacts would be similar to those described under past and present actions for livestock grazing. Increased minerals, renewable energy, and ROWs development would continue to pose safety risks to those traveling through those areas. Implementing BMPs, SOPs, and permit stipulations would help protect public health and safety. Increasing the number of special recreation management areas (SRMAs) would provide additional public health benefits by constructing facilities. Sensitive species management and WHB management should not affect safety in those areas. Increasing fire would threaten more people as recreational use increases. Fire restrictions would reduce the potential and threats to public safety from wildfire.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

Incremental impacts would remain low based on fire restrictions, permit requirements and public health and safety education. Fire prevention may reduce the potential for human caused fires.

4.5.3 Social and Economic Conditions and Environmental Justice

Summary

Alternative A would maintain current management practices; therefore, it would not induce any changes to the socioeconomic indicators shown on Table 4-50, below; however, if circumstances or context changed and management actions did not respond to these change, maintaining the current management practices under Alternative A could impact socioeconomic conditions and environmental justice. The actions proposed under Alternative B are more use oriented and call for the fewest surface occupancy restrictions, special stipulations, and exclusion areas to protect water resources, wildlife and wildlife habitat, and geological, paleontological, and cultural resources, leaving more resources and areas available for economic uses. As such, Alternative B provides the highest level of opportunity for economic development based on market goods, such as extractive industries, while potentially reducing non-market values, such as aesthetics and opportunities for solitude. Alternative C is more environmentally oriented, with the greatest acreage of restrictions; therefore, Alternative C has the greatest potential for limiting market-based economic activities that rely on resource uses but possibly enhancing non-market values, including bequest values for undisturbed lands. The acreage restrictions under Alternative D fall between Alternatives B and C. Actions designed to protect sensitive resources under all alternatives could result in increased expenditures to comply with resource restrictions as a result of the management of some resources, such as water.

Table 4-50
Summary of Effects on Socioeconomics and Environmental Justice—Alternatives A, B, C, and D

Indicator	Alternative A	Alternative B	Alternative C	Alternative D
Employment	No net change	Net increase	Potential net decrease under Option 2	Potential net increase
Income	No net change	Net increase	Potential net decrease under Option 2	Potential net increase
Demand for Housing	No net change	Potential indirect net increase	No net change	Potential indirect net increase
Government Services	No net change	Potential indirect net increase	Potential net decrease under Option 2	Potential indirect net increase
Environmental Justice	No net change	No change anticipated	Potential effect on low-income populations under Option 2	No net change
Non-Market Values	No net change	Potential net decrease	Potential net increase	No net change to potential net increase

Source: BLM and Tetra Tech qualitative and quantitative analyses.

Each of the action alternatives has the potential to affect local expenditures for equipment, supplies, and services by generating income in the local economy and fostering growth, by minimizing the potential for changes in economic growth, or by reducing income in the local economy and limiting growth, depending on the resource being considered. In general, Alternative B has the greatest potential for generating economic growth or minimizing effects on economic growth. Alternative C has the most actions that would limit resource uses, thereby limiting the contribution of these uses to the local economy. In particular, Option 2 would eliminate grazing, which would impact individual ranchers, reduce local economies, and affect the social values of the local area. Alternative

D would tend to have an economic effect that is intermediate between Alternatives B and C due to management actions relating to grazing, minerals, and recreation.

None of the alternatives would result in direct changes in population or changes in the demand for housing, schools, and public facilities and services. No low-income or minority populations would be displaced or separated from community facilities, but management actions that restrict tribal uses of BLM lands or increased activities (such as mining) that could be a public health issue with respect to these uses could represent an environmental justice impact. Similarly, restricting grazing opportunities on BLM lands to low-income or minority ranchers for whom the use of these lands is a primary or sole source of income could disproportionately affect environmental justice populations.

Methods of Analysis

Methods and Assumptions

Impact analyses and conclusions are based on the existing and projected population, employment, income, housing, earnings, social values, economic contribution of public lands, as described in the Final Winnemucca Socioeconomic Report and in Chapter 3 of this document. Low-income and minority populations also are considered. Changes in these indicators could result from management of other resources, particularly those that form the important industry sectors that rely on public lands resources in the WD. As identified in Chapter 3, these important economic sectors are recreation, mining, and agriculture; the forestry and timber sectors have a minimal economic presence in the WD. Therefore, management actions that directly or indirectly affect uses on public lands could have socioeconomic impacts. In addition, renewable energy and sustainable development management could have socioeconomic effects.

Assumptions include the following:

- Restrictions in land available or implementing SOPs, BMPs, or mitigation measures in order to protect other resources could indirectly affect socioeconomics by increasing costs or precluding development;
- Decisions made with regard to transportation and access could result in increased or decreased motorized or nonmotorized backcountry opportunities, which also could impact revenues created directly or indirectly for individuals seeking those types of recreation opportunities; an increase in access would increase economic activity associated with motorized uses; and OHV restrictions would slightly decrease this type of economic activity;
- Increased population growth and relocation would increase economic activity and improve local economies;
- Changing ownership from public lands to private lands (land tenure adjustments) would expand state and local tax bases and encourage development, which would improve the local economies;
- Closing areas for certain uses could negatively impact local economies; and
- Restrictions and closures specifically to protect threatened or endangered species could reduce economic activities in the closed areas or could increase operational expenses.

Effects are quantified where possible, but potential socioeconomic impacts were not modeled. Where dollar values were unavailable for economic effects, the degree of impact was based on the number of AUMs (for grazing) or acreage potentially affected. In the absence of quantitative data, impacts were described using ranges of potential impacts or in qualitative terms, as appropriate.

Social and Economic Conditions and Environmental Justice: Effects from Air Quality Management

Effects Common to All Alternatives

Dust control measures could increase operations costs for mining and renewable energy activities under all alternatives. However, dust minimization would provide a non-market asset to visitors by providing clean air, which in conjunction with other benefits could help ensure continued visitation in the WD and continued visitor expenditures in the local economy. In addition, dust and air pollution were identified as a particular tribal concern, principally with respect to minerals activities; and dust control measures would, in part, address the concerns of this environmental justice population.

Effects under Alternative A

Ensuring that commercial operators (such as mineral extraction industries) on public lands implement dust abatement and other mitigation measures would increase operational costs, which could reduce expenditures for supplies and services within local communities.

Effects under Alternative B

Effects would be the same as under Alternative A.

Effects under Alternative C

Effects would be the same as under Alternative A.

Effects under Alternative D

Effects would be the same as under Alternative A.

Social and Economic Conditions and Environmental Justice: Effects from Geology Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from geologic resources management.

Effects under Alternative A

Mineral disposal would be allowed in areas containing unique geologic resources. This could benefit the local economy through the continued employment and local expenditures provided by mining operations.

Effects under Alternative B

Limiting OHV travel to existing routes to protect unique geological features could have effects on socioeconomic resources. Mineral disposal would be restricted due to access limitations, if no existing roads and trails are located in areas containing saleable minerals near unique geologic resources. Restrictions to mineral disposal activities could reduce revenues from these operations, which could result in lower employment in the industry in the WD and could reduce expenditures for supplies and services within local communities by the affected operations. However, preserving unique geologic features would ensure their continued presence for the enjoyment of current and future visitors, which would be a non-market benefit to society that could be a value similar to or greater than the reduction in market activity that could occur.

Effects under Alternative C

Areas containing unique geologic resources would be closed to discretionary actions that would impact geologic features, including mineral disposal. Access to these areas would also be closed. These closures could increase costs to mining operations and decrease revenues associated with minerals in areas containing unique geologic resources. The associated employment and local expenditures also could be reduced as a result. Alternative C would offer greater protection to these features than would Alternatives A and B, and preservation of these features would represent a non-market value to society, as described under Alternative B.

Effects under Alternative D

Managing unique geologic features while allowing for multiple uses would continue to stimulate local economies as uses would not be restricted except to mitigate impacts on unique features. Protecting features through designating sites as eligible for National Natural Landmarks would also encourage the public to visit areas where unique geologic resources occur. Revenue may increase within local communities based on recreation demand for services, fuel and lodging. Impacts would be dependent on the amount of visitation in areas.

Social and Economic Conditions and Environmental Justice: Effects from Soil Resources Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from soil resources management.

Effects under Alternative A

Reducing erosion would improve rangeland health and promote stable livestock operations. Minerals and energy development would experience increased operational costs.

Effects under Alternative B

Alternative B is similar to Alternative A. Fewer restrictions would improve efficiencies for livestock operations and mineral and energy development. Tax revenues from livestock sales, jobs, and revenues from the purchase of goods and services associated with livestock operations and mineral and energy development would benefit local communities.

Effects under Alternative C

Implementation of BMPs, mitigation measures, required reclamation, and seasonal restrictions to protect soil resources and salvage topsoil would increase operational expenses for energy and mineral development operations and would limit returns to local economies.

Effects under Alternative D

The effects from soil resources management under Alternative D would be similar to those identified under Alternative C, except that fewer seasonal closures are likely to occur and ranching and recreational activities would not be affected as much as if seasonal closures were mandatory.

Social and Economic Conditions and Environmental Justice: Effects from Water Resources Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from water resources management.

Effects under Alternative A

Water resources management under Alternative A would not change the social, demographic, and economic trends described in the Winnemucca RMP Socioeconomic Report because no provisions are made with respect to the management of priority watersheds, wellhead protection zones, or water importation and exportation. Developing water sources on public land could promote economic growth for a number of uses. Using land acquisitions and other realty actions to acquire water resources would ensure water is available for recreation and other uses and would continue the economic benefits to the communities provided by these uses.

Effects under Alternative B

Managing wellhead protection zones to protect public drinking water and managing municipal watersheds as recharge areas would allow for population and development growth in communities that depend on water rights and water supplies. Managing priority watersheds for multiple uses and managing wellhead protection zones as avoidance areas could allow continued use of these areas for grazing, recreation, and minerals development. This would result in continued revenue to local communities, jobs, and tax revenues associated with ranching. It also would provide local expenditures by recreational visitors and employment and expenditures associated with mining operations. These effects would be realized only to the extent that these multiple uses occur in priority watersheds and wellhead protection zones. Alternative B also would foster economic growth and development, which would benefit employment and incomes in the WD and areas outside of WD by allowing water importation and exportation projects.

Effects under Alternative C

Managing wellhead protection zones and priority watersheds as exclusion areas for discretionary actions could limit the use of these areas for grazing, recreation, and mineral disposal, depending on the demand for such uses in these areas. These restrictions could result in diminished revenue to local communities, jobs, and tax revenues associated with ranching; local expenditures by

recreational visitors; and employment and expenditures associated with mining, contingent on the extent of the resources that would be affected. The potential economic growth and development that could result from allowing water importation and exportation projects under Alternative C would be limited by sustaining perennial yield.

Effects under Alternative D

The effects under Alternative D would be similar to those under Alternative B. These specific effects include managing priority watersheds. Some use limitations could increase costs to commercial operations or in some cases preclude development if development conflicts with the priorities in which the watersheds were created. Due to use restrictions, effects from managing wellhead protection zones under Alternative D would be higher than those under Alternative B in terms of revenue to local communities, jobs, tax revenues from ranching and recreational visitors, employment, and mining.

Social and Economic Conditions and Environmental Justice: Effects from Vegetation—Forest and Woodland Products Management

Effects Common to All Alternatives

None of the alternatives would have measurable socioeconomic impacts on employment or income because the amount of forest land within the WD, and the associated economic activity, is relatively small. However, there would be potential incremental differences among alternatives, which are described below for each alternative.

Effects under Alternative A

As described under Effects Common to All Alternatives, none of the alternatives would have measurable socioeconomic impacts on employment or income, but there would be potential incremental differences among alternatives, which could have a localized effect. Alternative A does not allow for commercial harvest of woodland products. Minimal socioeconomic impacts would be expected due to the small area where woodland products would be available.

Effects under Alternative B

Alternative B allows for commercial harvest of wood products. This alternative would have the greatest acreage available for both commercial and noncommercial harvest, including tribal collection of pinyon and juniper products; therefore, it would provide the greatest social benefit for minority populations (Indian tribes and those low-income populations that would require firewood) and the greatest potential for economic benefit with respect to commercial revenues and the associated economic multiplier effects.

Effects under Alternative C

Alternative C would prohibit both commercial and noncommercial harvest of woodland products. This alternative would provide the least acreage for both commercial and noncommercial harvest, including tribal collection of pinyon and juniper products; therefore, the two options would offer the lowest social benefit for minority populations (Indian tribes and those low-income populations

that require firewood) and the lowest benefit with respect to commercial revenues and the associated economic multiplier effects.

Effects under Alternative D

Alternative D would allow commercial harvesting to achieve resource objectives and on a case-by-case basis, with prohibitions in some areas. Alternative D, therefore, would provide an intermediate level of social and economic benefit for minority populations and an intermediate benefit to commercial revenues and the associated economic multiplier effects. Allowing the short-term harvest of woodland products throughout the WD would meet short-term public wood needs and would provide the economic benefits described above.

Social and Economic Conditions and Environmental Justice: Effects from Vegetation—Invasive and Noxious Species Management

Effects Common to All Alternatives

Under all alternatives, weeds management would be unlikely to have a measurable effect on environmental justice populations or socioeconomic resources. Weeds management under all alternatives would be likely to improve rangeland, which also could improve the health of the animals that graze it. Improved livestock health could reduce costs to ranchers for maintaining livestock and could increase their sale price. Weed management would increase operational costs for commercial users to control weeds. These costs could reduce the amount of goods and services purchased, but they would have minimal impacts on the local economies.

Effects under Alternative A

Controlling weeds would improve the health of the land, which would provide long-term stability for ranching operations. Commercial operators, including those engaging in mineral and energy development and realty actions, could experience increased operational costs to treat weeds. As a result, revenues associated with these operations could decline as they adjust to increased costs, and local economies may experience minimal declines in goods or services purchased by these commercial operations.

Effects under Alternative B

The effects of Alternative B would be similar to those described under Alternative A.

Effects under Alternative C

Alternative C would not allow chemical integrated weed treatments. Cost to commercial operators would increase, as they would have to use other treatment methods, such as mechanical treatments, to control weeds. The socioeconomic effects of these increased costs would be the same as those described under Alternative A. Biological control could provide long-term land health benefits, with fewer environmental (and perceived public health) side effects, compared to chemical use, which would benefit the ranching industry, which depends on land health. Improved land health could reduce costs to ranchers by reducing the amount of land needed to meet forage needs and could benefit the economy of ranching-dependent communities.

Effects under Alternative D

The effects of Alternative D would be similar to those described under Alternative A.

Social and Economic Conditions and Environmental Justice: Effects from Chemical and Biological Control

Effects Common to All Alternatives

Under all alternatives, chemical and biological control would likely increase operational costs but would have minimal indirect effects on environmental justice populations and socioeconomic resources. Economic activities that occur within the WD, including access to traditional sites, recreation, grazing, mining, and renewable energy resource development, would not be altered by chemical and biological control.

Effects under Alternative A

The socioeconomic effects of chemical and biological control would be the same as those identified under Alternative A for weeds management.

Effects under Alternative B

Alternative B emphasizes cost and treatment effectiveness, ultimately reducing operational costs. As a result there would be more disposable income available to be spent in local communities.

Effects under Alternative C

The socioeconomic effects of chemical and biological control would be the same as those identified under Alternative C for weeds management.

Effects under Alternative D

The effects of Alternative D would be similar to those described under Alternative A.

Social and Economic Conditions and Environmental Justice: Effects from Vegetation—Rangeland Management

Effects Common to All Alternatives

All alternatives provide for grazing on rangeland, except for Option 2 under Alternative C. The continued availability of rangeland for grazing would maintain ranchers' contribution to the local economy through expenditures on equipment, supplies, and services and employment. In addition, continued grazing would maintain the social welfare of the rural population of the WD by preserving a unique way of life. Implementing mitigation measures and emergency stabilization and rehabilitation treatments may temporarily close areas to certain uses, such as livestock grazing and recreation, which would have short-term economic impact.

Effects under Alternative A

Resting burned areas of rangeland vegetation from grazing for two growing seasons could result in higher costs to ranchers and a subsequent reduction in income for permittees, to the extent that

these reductions would require permittees to lease additional private land, to purchase additional forage, or to reduce livestock numbers over the long term. These impacts on ranchers could affect local communities dependent on ranching operations in terms of tax revenue from livestock sales, jobs, and the purchase of supplies. The resultant loss in livestock grazing fees would mean lower returns to the affected counties from livestock grazing. These effects would be short term until burned areas were open again to grazing. Restoring crested wheatgrass seedings would provide a consistent forage base for livestock, helping to stabilize livestock operations and economic benefits to the community.

Effects under Alternative B

Under Alternative B, the effects of resting burned areas of rangeland vegetation from grazing for two growing seasons would be the same as described under Alternative A. Under Alternative B, more livestock grazing flexibility would be afforded by using an adaptive management process. This process would encourage development of specific plans to allow flexibility in grazing operations. Other actions, such as prescribed grazing and restoring wheatgrass seedings, would improve the forage base. This alternative would improve grazing operations and would provide consequent economic benefits to local communities.

Effects under Alternative C

Under Alternative C, Option 1, the effects of resting burned areas of rangeland vegetation from grazing for five growing seasons are likely to be greatest on ranching with respect to a reduction in income for permittees. It would be more likely that these reductions would require permittees in burned areas to lease additional private land, purchase additional forage, or reduce livestock numbers over the longer resting period. Alternative C, Option 1, would result in the greatest loss in grazing fees and returns to local governments. Option 2 would eliminate grazing on public lands, leading to potentially large economic losses to individual ranchers. See the Effects from Livestock Grazing under Alternative C for further socioeconomic analysis.

Effects under Alternative D

Alternative D provides a more flexible timeframe for resting burned areas of rangeland vegetation from grazing. Other impacts would be similar to those described under Alternative A.

Social and Economic Conditions and Environmental Justice: Effects from Vegetation— Riparian and Wetlands Management

Effects Common to All Alternatives

Ensuring the continued health of wetland and riparian areas would continue to provide a non-market benefit for visitors to the WD by continuing to make habitat available for biological diversity and consequent wildlife watching. Habitat that supports diverse wildlife could draw visitors and visitor expenditures to the WD and could secure the existence of a valued resource for the future. Wetlands can provide direct use benefits if such products as nuts and berries can be produced from them. In addition they provide such non-market values as nutrient retention, water filtration, flood control, and erosion protection.

Effects under Alternative A

Mitigating adverse impacts on wetland riparian areas could increase operational costs for ranchers and mineral and energy development. The costs of realty actions also could increase, and certain recreational uses could be precluded. These effects would vary based on the nature and degree of the mitigation.

Effects under Alternative B

Alternative B offers more flexibility for uses within riparian wetland areas, as PFC thresholds are lower, which would allow more uses and associated disturbance in these areas. Achieving PFC upward to 60 percent could increase operational costs and restrict uses if PFC objectives are not met. The local economy and social values could be affected if a reduction in the area or type of recreation resulted in a decrease in visitors or a decrease in a locally valued recreation type (such as OHV use). If these road closures and route relocations inhibited access to minerals and mining operations, costs to these operations could increase. These costs could be passed along to the local economy in terms of decreased employment or income.

Effects under Alternative C

Alternative C would impose more limitations on economic activities than Alternative B. The two options would be more likely to affect ranching costs, recreation, and mining as a result of higher PFC objectives. Achieving PFC upward to 85 percent could increase operational costs and restrict uses if PFC objectives are not met. This could result in diminished revenue to local communities and tax revenues associated with these operations. However, Alternative C would provide greater protection to riparian and wetlands areas, the preservation of which would benefit society, as described above under Effects from Vegetation-Riparian and Wetlands Management, Effects Common to All Alternatives.

Effects under Alternative D

Alternative D balances limitations between Alternatives B and C. Some limitations on economic activities and would be the most likely to affect ranching costs, recreation, and mining.

Social and Economic Conditions and Environmental Justice: Effects from Fish and Wildlife Management

Effects Common to All Alternatives

Protecting fish and wildlife would involve use restrictions and implementation of mitigation measures and SOPs under all alternatives, which could affect the economic contribution of grazing, minerals operations, recreation, or renewable energy development, depending on the alternative, the types of restrictions, and the extent of the restrictions. The protection of fish habitat could improve fisheries for recreational use, which can bring visitor expenditures into the local economy, and, similarly, improving wildlife habitat can improve wildlife watching and hunting, both of which can inject tourist dollars into the local economy. Fish and wildlife habitat protection can provide increased biodiversity, which can have non-market socioeconomic values. These non-market values include existence values to current generations and option and bequest benefits to future generations. Existence value reflects benefits from knowing that a diversity of wildlife and flora

exist; while, the potential benefits from this biodiversity to be available in the future would be an option value. The bequest value derives from ensuring that a diversity of wildlife and flora would be preserved for future generations. Nationally 71,132,000 people engaged in wildlife watching in 2006, generating 1,063,482 jobs and over \$40 billion in income (USFWS 2006b). Wildlife watching in Nevada is valued at an average of \$44 per day per in-state visitor and \$85 per day per out-of-state visitor, based on a contingent valuation survey (USFWS 2006a).

Effects under Alternative A

Use restrictions under Alternative A to protect nesting migratory birds and management to protect wildlife habitat could affect ranching, mining, and recreational uses by limiting when and where these activities could occur. Therefore, this alternative could affect the economy by potentially reducing local expenditures, employment, and income. Defining stream bank alteration restrictions in implementation plans could limit use, while benefiting the economy by improving fisheries. Managing wildlife habitat to provide big game populations would foster continued economic growth from recreation and hunting.

Effects under Alternative B

Of the action alternatives, Alternative B would have the lowest potential to adversely affect the economic and social uses within the WD and the highest potential to stimulate the economy through the identified management actions. Alternative B possibly would not require as many operational restrictions or mitigation measures to protect wildlife habitat. Alternative B would foster ranching by prohibiting pioneering elk populations. This measure would remove elk hunting opportunities, which could also reduce the economic contribution associated with hunting. Allowing artificial water sources also would benefit wildlife and could improve hunting and wildlife watching. Hunting generated about 24.3 percent of total direct expenditures within the WD between October 2003 and September 2004 (BLM 2006c).

Effects under Alternative C

Of the action alternatives, Alternative C has the greatest potential to affect the economic and social uses within the WD and the lowest potential to stimulate the economy through the identified management actions. The two options would require restrictions on surface disturbance to protect wildlife habitat. Accepting colonization by pioneering elk and prohibiting artificial water sources under Alternative C could affect the productivity of ranching operations; however, allowing elk colonization would provide socioeconomic benefits by providing new hunting opportunities. Removing access routes that are adversely impacting aquatic resources could affect grazing and recreation use by decreasing accessibility and the number of routes available for recreation, such as OHV use.

Effects under Alternative D

Designating priority habitat areas would affect uses on approximately 1,199,539 acres of public lands, especially to mineral development of ROWs, and renewable energy. Local economies would not benefit from increase jobs and revenue.

Social and Economic Conditions and Environmental Justice: Effects from Special Status Species Management

Effects Common to All Alternatives

All alternatives would impose restrictions to protect special status species that could inhibit ranching, mining, recreation, and renewable energy development activities. These restrictions could increase the costs of operations, decrease the incomes of operators, discourage some recreational activities, and decrease expenditures within the local economy. Avoiding the listing of species as threatened and endangered by implementing management actions designed to prevent listing would impose fewer restrictions on ranching, mining, recreation, and renewable energy activities, which otherwise could be curtailed to protect threatened and endangered species. Protecting threatened and endangered species also could increase operational costs for these uses. Therefore, avoiding listing would allow for the continued economic contribution of these activities without the associated costs of additional protection measures. However, protecting special status species would benefit biodiversity, which would provide non-market benefits in the form of existence value to current generations and option and bequest benefits to future generations.

Effects under Alternative A

Use and surface disturbance restrictions to protect sensitive species would place limitations on mining, realty transactions, recreation, and energy development. The restrictions could affect the local economy to the extent that they would increase the operational costs of mining, realty transactions, and energy development or decrease the number of visitors. These increased costs could result in reduced earnings and decreased expenditures within the overall economy, affecting economic growth, income, and employment. The effects of implementing management actions that would avoid listing species as threatened and endangered would be the same as those described under Effects Common to All Alternatives.

A decrease in the number of visitors due to access restrictions or limitations on the types of recreation activities available could affect the local economy by decreasing local expenditures on lodging, dining, recreational equipment and repairs, and supplies, which could affect incomes and employment in these sectors. Similarly, if ROW restrictions were to discourage energy development, the potential for economic growth based on this industry also could be limited, depending on whether the restrictions would occur in areas of high potential.

Effects under Alternative B

Under Alternative B, the economic impacts would be similar to those described under Alternative A. The increased flexibility in the application of use and surface disturbance restrictions to protect sensitive species would decrease the degree of market effect on the economy.

Effects under Alternative C

Under Alternative C, use restrictions for no surface disturbance or no surface occupancy within all PMUs would prohibit development of ROWs, and renewable energy throughout a substantial portion of the District. Multiple counties would be affected as local economies would not benefit from increase jobs and revenue.

Effects under Alternative D

Under Alternative D, use restrictions with five PMUs would affect about 1,196,052 acres of public lands, especially to mineral development of ROWs, and renewable energy. Local economies would not benefit from increase jobs and revenue.

Social and Economic Conditions and Environmental Justice: Effects from Wild Horse and Burro Management

Effects Common to All Alternatives

All alternatives would support the management of WHB on WD lands and would preserve this social value.

Potential economic effects could occur to the extent that management of WHB would affect grazing lands and ranching operations. Implementing mitigation measures may increase expenditures in order to protect WHB.

Effects under Alternative A

Gathering WHB to low AML and managing WHB within the AML range would improve rangeland health and therefore potentially stabilize the livestock forage base for ranchers. This would result in lower maintenance costs to ranchers and potentially higher sales prices for livestock and the associated economic benefits. Implementing mitigation measures to protect WHB may increase operational costs for mineral and energy development. These costs would have minimal impacts on the local economy.

Effects under Alternative B

Alternative B would increase WHB management to accommodate multiple uses. Operational costs would be lower and the quality of grazing land could improve. Improved land health would improve livestock health and potentially lower maintenance costs and result in higher livestock sales prices for ranchers. Operational costs to other public land users would be lower, compared to other alternatives.

Effects under Alternative C

Precluding special recreation permits in HMAs if they cause adverse impacts on WHB would limit recreation uses and the economic benefits they provide for OHV racing and outfitter and guide services. Stressing unobstructed landscapes to ensure the free-roaming nature of WHB may increase costs to livestock operators to manage livestock. Wild horse populations may increase faster over time without fertility control, which may reduce the amount of forage available to livestock and impair rangeland health until gathers are implemented.

Effects under Alternative D

The socioeconomic effects of WHB management under Alternative D would be similar to those described under Alternative A. Gathering WHB to low AML would protect forage availability and economic stability for livestock operators.

Social and Economic Conditions and Environmental Justice: Effects from Wildland Fire Management

Effects Common to All Alternatives

Fire restriction could pose seasonal limitations for some uses, such as recreation. Hazardous fuels reductions could protect infrastructure from wildfire, ensuring continued employment and other economic benefits. Emergency stabilization and rehabilitation treatments would temporarily close areas for certain uses. However, restoring rangeland would improve health of the land, providing long-term economic benefits for ranching and wildlife habitat for hunting. Implementing wildland fire protection plans would protect the economic base of communities.

Effects under Alternative A

Implementing fuel treatments would provide economic benefits by protecting mineral development and energy infrastructure from wildland fire. The economic benefits include reduced potential for business interruption from wildland fires. Fuel treatments also would protect rangelands by reducing the spread and intensity of wildfire. This would help ensure a stable forage base for livestock operations. Rehabilitation of rangeland after a fire would reestablish a forage base for livestock operations, offering long-term stability to the livestock operations. Short-term closures of areas undergoing rehabilitation would increase operational costs to ranchers for finding alternative feed or forage. Short-term closures may limit OHV use in areas under rehabilitation. This may cause short-term and minimal economic impacts on local communities.

Effects under Alternative B

Economic impacts would be similar to those described for Alternative A. Allowing conditional fire suppression management for a benefit (110,167 acres) may improve rangeland health in areas, which would be an economic benefit and offer long-term stability to ranchers.

Effects under Alternative C

The effects from wildland fire management under Alternative C would be the same as those identified under Alternative A.

Effects under Alternative D

The effects from wildland fire management under Alternative D would be the same as those identified under Alternative B.

Social and Economic Conditions and Environmental Justice: Effects from Cultural Resources Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from cultural resources management.

Effects under Alternative A

Under current conditions, changes to OHV travel management would remain the same with few restrictions on OHV use. Recreation use based on OHVs would continue to grow and contribute economic benefits to local communities through the purchases of fuel and other goods and services. However, OHV travel could disturb cultural resources, which may have had greater value to visitors who prefer more primitive forms of recreation, educational opportunities, or preservation of the area's ties with the past. Maintaining a VRM Class II objective within six miles of CNHT centerline or to the visual horizon within the six-mile zone would continue to provide the highest objective among the alternatives for protecting the visual setting of the historic trail. This would enhance the experience of visitors following the CNHT. However, open OHV use in the vicinity of the trails could impact the trail directly as well as the setting of the trails, affecting the visitor experience. Open OHV use and the lack of viewshed protection for the Lovelock Cave Byway could make the byway less attractive to visitors.

Effects under Alternative B

The socioeconomic effects of cultural resources management under Alternative B would be similar to those described under Alternative A. Reducing the current objective for the CNHT trail to VRM Class III overall and Class IV along I-80 and the utility corridor would allow additional intrusion on the view shed of the historic trail affecting visitor experience. Effects of OHV use would be the same as under Alternative A. Adding a VRM Class III objective to the Lovelock Cave BCB and Lovelock Cave would increase protection from current levels, but would still allow moderate change that could reduce the integrity of the visual setting.

Effects under Alternative C

Under Alternative C, limiting OHV travel to protect culturally sensitive sites or historic trails and closing Class I segments of National Historic Trails could discourage some OHV users but could encourage use by visitors who appreciate more primitive forms of recreation. This has the potential for decreased local expenditures by OHV users and hunters but increased expenditures by other user groups including historic trail visitors. Retaining the current VRM Class II objective for the CNHT, adding a VRM Class II objective to the Lovelock Cave BCB, and removing sensitive trail viewsheds from consideration for disposal would provide the highest objectives among the alternatives for protecting the visual setting of the CNHT and Lovelock Cave Byway resulting in enhanced expenditures for historic trail and Lovelock Cave Byway visitors with consequent increased expenditures by visitors. Minerals, energy, and realty actions would experience increased operational costs in areas of historic trails in order to comply with VRM class II objectives. These costs may include changing locations or painting structures to blend with the setting. These costs would have minimal socioeconomic impacts on local communities.

Prohibiting fluid and solid minerals surface occupancy and mineral material sales to protect historic trails could limit economic development based on mineral operations, increase operations costs, and reduce expenditures, income, and employment.

Effects under Alternative D

The effects from cultural resources management under Alternative D would be similar to those described under Alternative C. While there would be a reduction from current VRM objectives, this action would allow the BLM to assess impacts on the visual section of trail resources based on the existing character of the landscape resulting in less economic impacts while allowing visitors to appreciate trail.

Social and Economic Conditions and Environmental Justice: Effects from Tribal Consultation

Effects Common to All Alternatives

Tribal consultation could prevent impacts, such as access restrictions, health effects, noise, and physical disturbance of traditional sites, to this environmental justice population.

Social and Economic Conditions and Environmental Justice: Effects from Paleontological Resources Management

Effects Common to All Alternatives

All alternatives would impose some level of public access restriction that could affect such economic activities as recreation, grazing, and minerals development for the protection of paleontological resources. These restrictions also would ensure that the potential for losses of this resource would be minimized. The preservation of paleontological resources would have non-market values similar to those described under Effects from Geology Management, Effects under Alternative B.

Effects under Alternative A

Alternative A would restrict discretionary realty and recreation actions from disturbing or destroying scientifically important paleontological resources. This would increase operational costs for actions related to mineral disposal, recreation, and realty and could limit the scope of recreation activities. These costs would have minimal socioeconomic impacts on local communities.

Effects under Alternative B

The socioeconomic effects from paleontological resources management under alternative B would be similar to those identified under Alternative A.

Effects under Alternative C

Under Alternative C, no activities would be authorized if they would disturb, alter, or destroy important paleontological sites. Socioeconomic impacts would vary based on the size of proposed projects. Impacts could include reduced expenditures within the local economy, which could indirectly affect overall income and employment. Alternative C would provide the greatest level of protection of this resource and the greatest protection of its associated non-market value as a draw to visitors, an educational tool, and a heritage asset.

Effects under Alternative D

The socioeconomic effects from paleontological resources management under Alternative D would be the same as those described under Alternative A.

Social and Economic Conditions and Environmental Justice: Effects from Visual Resources Management

Effects Common to All Alternatives

Commercial operations would experience increased costs to comply with VRM management objectives under all alternatives. These increased costs would be associated with such activities as moving, shaping, or painting facilities to blend with the surrounding viewshed. Operational costs would increase based on the designated VRM class in which the commercial operations would occur. VRM management would preserve valued viewsheds that draw recreational visitors, who also generate expenditures, income, and employment in the local economy.

Effects under Alternative A

Under Alternative A, costs to commercial operations would be relatively low and would have minimal socioeconomic impacts on local communities.

Effects under Alternative B

Operational costs under Alternative B would be greater than under Alternative A, as more lands would be designated as VRM Class II and III.

Effects under Alternative C

Operational costs under Alternative C would be greater than under Alternative A, as more lands would be designated as VRM Class II and III. More land would be designated as VRM Class II than under Alternatives A and B, which would have more restrictions and would incur higher costs of operation in these areas. However, Alternative C would preserve views over a greater area, which could be more valuable to the public, including both the local population and visitors to the WD, than the negative effects of increased commercial operations costs.

Effects under Alternative D

The socioeconomic effects from visual resources management under Alternative D would fall between those identified under Alternatives B and C, based on the VRM classification under Alternative D.

Social and Economic Conditions and Environmental Justice: Effects from Cave and Karst Resource Management

Effects Common to All Alternatives

Implementing mitigation measures to protect cave and karsts would vary based on site-specific situations. Avoiding caves and karsts may increase costs to mining and energy operations.

Preservation of this resource would have similar non-market values to those described under Effects from Geology Management and Effects from Paleontological Resources Management.

Effects under Alternative A

Under Alternative A, the costs identified under Effects Common to All Alternatives would have a minimal effect on these operations and therefore a minimal impact on the local economy.

Effects under Alternative B

The effects on socioeconomic resources under Alternative B would be similar to those described under Alternative A.

Effects under Alternative C

Restrictions on surface-disturbing activities near cave and karsts would increase operational costs to protect these resources. Alternative C would have limited flexibility with respect to the location of surface-disturbing activities, including some types of recreation and minerals and energy resource development, because these activities would be prohibited within a 500-foot buffer around caves and karsts, causing higher costs as compared to the other alternatives. Alternative C would provide the greatest area of protection of cave and karst resources, which could also provide the maximum realization of the non-market values of this resource, depending on its importance in the ROI and to visitors in the WD.

Effects under Alternative D

Under Alternative D, restrictions would be more flexible than under Alternative C, resulting in lower operational costs and associated economic impacts, as compared to Alternative C.

Social and Economic Conditions and Environmental Justice: Effects from Livestock Grazing Management

Effects Common to All Alternatives

Under all alternatives except Option 2 of Alternative C, livestock grazing on public lands would continue, ensuring that tax revenues from livestock sales, jobs, income, and ranching-related expenditures in the local economy would continue and that livestock grazing receipts would be returned to the counties within the WD (grazing receipts totaled \$51,357 in 2005). All alternatives except Alternative D would designate 399,073 AUMs of livestock forage, which would allow for the same level of cattle and calf production under these alternatives. At a return rate of \$0.1529 per AUM, approximately \$61,019 would be returned to WD counties under Alternatives A, B, and C. In addition, the social welfare of the rural population of the WD would be maintained by preserving a unique way of life under all alternatives.

Effects under Alternative A

Resting burned areas from livestock grazing would have short-term effects by increasing operational costs for ranchers. These costs include finding alternative range to graze or buying hay to feed livestock. Increased costs would have short-term impacts, depending on length of time that the

closures are in effect. Economic impacts would be minimal and would include loss of tax revenue from livestock sales and a reduction in the purchase of supplies.

Allowing relinquishments of grazing permits and providing forage banks could have both positive and adverse socioeconomic effects. If AUMs in other allotments became unusable, the use of these areas by the affected permittees could offset economic losses. However, if the relinquished allotments were not in use, they would continue to require maintenance.

Allowing TNR would maximize a permittees' use of allotted AUMs, potentially benefiting ranchers' operational efficiency.

Effects under Alternative B

Designating 296,008 acres as closed to livestock grazing would have little, if any, socioeconomic impacts on the livestock industry and associated communities, as these closed areas are primarily lakebed playas with little vegetation; consequently, they are not suitable for grazing.

Alternative B would have both positive and adverse socioeconomic effects by not retiring grazing permits and not providing forage banks. Livestock operations that have had public rangeland affected by fire or drought would be jeopardized by the loss forage and increased costs to find forage. This alternative would improve collaboration between the BLM and the permittees and possibly allow more flexibility to livestock operations based on adaptive management applied to the allotments. This approach could maximize the efficiency of allotment use, decreasing operational costs and increasing the socioeconomic benefits to those who participate in the process.

The effects of allowing TNR would be the same as those identified under Alternative A. In addition, allowing continuous season-long grazing would maximize the amount of forage utilized, which could decrease production costs to ranchers, contributing to the local economy.

Effects under Alternative C

Option 1

Although a slightly greater area would be closed to grazing than under Alternative B, the effects of acreage closures would be similar to those described under Alternative B.

Under Alternative C Option 1, the effects of relinquishments of grazing permits and providing forage banks would be similar to those described under Alternative A. Closing newly acquired public lands to grazing would reduce benefits to the local economy from taxes from livestock sales and the sales of supplies, as well as the revenues from the purchase of goods and services generated by ranching.

Prohibiting TNR, eliminating grazing on acquired lands, and limiting grazing to two consecutive years during the critical growing period could reduce available forage, increase ranchers' operational costs, and limit grazing operations. The increase in operational costs is expected to have a minimal impact on local economies.

Option 2

Eliminating grazing would impact individual ranchers, the local economy, and the social values of the local area, and it could result in environmental justice effects. Costs to ranchers to provide forage for cattle would increase, potentially decreasing ranchers' incomes as they would have to find other sources of forage, such as purchasing additional hay or grazing land to equal the AUMs required for the livestock currently using public lands. Eliminating grazing would have an overall negative effect on the local economy, as ranching incomes would be reduced and consequently the purchase of local services and supplies would be reduced.

Although ranchers must hold private grazing lands in order to obtain grazing permits on WD lands, the loss of federal grazing permits could still affect their incomes and viability, depending on ranch size and the role that ranching plays as a source of income for the individual rancher. As the number of AUMs withdrawn from use increases, herd size decreases and more hay is sold. The reduction in returns from hay, as compared to livestock, causes a decline in ranch profits. Although the reliance of ranchers on forage from federal land grazing can be relatively small when calculated on an acreage or AUM basis, grazing on federal lands can be an important source of forage, based on seasonal needs. Seasonal forage availability affects the optimal use of other forages and resources when federal AUMs are not available. Potential reductions in income and net ranch returns can be greater than the direct economic loss from reductions in federal grazing. Eliminating public grazing may increase the rate of agricultural land conversion, which can increase costs to local governments to supply services and infrastructure for residential use. It has been estimated that converting 35 acres of agricultural land to residential use costs a county government \$1.13 for every dollar in revenue (Foulke et al. 2006). In addition, local governments would realize a loss in the value of returns from grazing fees, which totaled \$410,868 in 2005 (BLM 2006c).

A reduction in the level of ranching could affect the social value attached to this way of life, which is typically identified as "Western," and could affect communities whose identity and livelihood are associated with ranching. In addition to running a business, ranchers value ranching for the rural lifestyle it offers and the family life it provides. Eliminating ranching on BLM lands could be perceived as a threat to these values and could put these values at risk for small-scale ranchers for whom ranching is the dominant source of income. Ranch lands provide a traditional source of income, habitat for wildlife, and open spaces that are valued for wildlife watching and the preservation of naturalness. These characteristics are particularly important when population and development pressures result in the conversion of agricultural land and reduce open space. Communities can derive cultural identity and quality of life from the presence of this traditional land use, which could be reduced if eliminating grazing on WD lands resulted in a perceived loss of this tradition.

If increased ranching costs resulted in a loss of jobs and income to low-income or minority populations, eliminating grazing could have environmental justice implications.

Effects under Alternative D

Although a greater area would be closed to grazing under Alternative D than under Alternative B, the effects of acreage closures would be similar to those described under Alternative B.

The effects of allowing relinquishments of grazing permits, providing forage banks, and allowing TNR under Alternative D would be similar to those described under Alternative A.

Under Alternative D, conditionally allowing grazing for more than three consecutive years could result in decreased production costs to ranchers.

Social and Economic Conditions and Environmental Justice: Effects from Minerals Management

Effects Common to All Alternatives

General

Under all alternatives, continued use of WD lands for mining would contribute to the local and regional economy through the purchase of goods and services in the local economy by employees and for the physical mining operation. Mining would continue to employ local and regional labor, mainly in the provision of the goods and services sectors supplying the mining operations, and would contribute to local and regional income. In addition, the continued use of WD lands for mining would allow for the continued collection of mineral royalties, which would be returned to the state. Increased local populations as a result of continued growth and boom cycles in mining would cause social impacts on communities such as increased crime and increased use of public services. Impacts on public services include the potential for crowded schools, a greater demand for medical care, and increased demands on local law enforcement. Communities would experience increased costs in order to support growth.

Reclamation would be required under all alternatives which would increase operational costs for mineral development. However, reclamation would continue short-term employment at mine sites after active mining has ceased.

Closing areas to or withdrawing them from mining would directly limit the potential for economic development based on mining. Restrictions, such as seasonal use limitations and special stipulations, could increase the costs of operations, which could be reflected in a reduction in income, employment, or expenditures. If costs were to increase to the extent that mining operations would be economically prohibitive, restrictions would result in a decrease in mining operations and an associated decrease in income, employment, and local expenditures.

In particular, the unrestricted area available for saleable minerals (industrial minerals) and locatable minerals (gold) operations would be important to the employment and labor income of both Humboldt and Pershing Counties. Areas available for fluid minerals may generate returns from royalties (excluding rent and other revenues) to local counties.

Ensuring mineral development operations do not hamper existing public access would allow other uses of public lands to continue and maintain existing socio-economic benefits.

In addition to increasing the operations costs of commercial activities, closures and restrictions would protect sensitive resources that have non-market socioeconomic values. As identified in previous sections, unique geologic features, cave and karst resources, and paleontological resources represent a draw for current and future visitors and for residents who enjoy natural areas or residents who live in the area for its scenic, cultural, historic, and natural qualities. Wetlands, riparian

areas, and wildlife habitat supports diverse wildlife that could bring in visitors and visitor expenditures to the WD and secure the existence of a valued resource for the future. Improving wildlife habitat can improve wildlife watching and hunting, both of which can inject tourist dollars into the local economy. Wetlands can provide direct use benefits if such products such as nuts and berries can be produced from them. In addition they provide such non-market values as nutrient retention, water filtration, flood control, and erosion protection. Fish habitat could improve fisheries for recreation, which can bring visitor expenditures into the local economy. Both fish and wildlife habitat protection can improve biodiversity, which can provide non-market value in the form of existence value to current generations and option and bequest benefits to future generations.

RFDs

According to the reasonably foreseeable development scenario, no commercial quantities of oil and gas are anticipated from the forecast 18 wells, which would limit the employment and income that would be directly generated by an operation with long-term productivity. However, the manpower and equipment needed for exploration, drilling, and closure would be likely to use local or regional labor and would result in expenditures within the local economy, which could stimulate growth and increased income in these industries.

Effects under Alternative A

General

Alternative A has the largest area open to minerals exploration and development and the smallest acreage either closed or subject to special stipulations that would restrict such operations. Therefore, Alternative A has the highest potential for economic development related to minerals development and is the most likely to provide the highest level of expenditure, employment, and income relating to minerals within the local and regional economy. However, it would be the least protective of sensitive resources, which could have equivalent or greater non-market values.

Saleable

Under Alternative A, three clay, stone, and sand and gravel areas would be within closed areas, which could limit the potential for economic development based on saleable minerals.

Fluid

Under Alternative A, 32,124 acres within former KGRAs or current or historical geothermal lease areas would be closed, and 1,834 acres would have no surface occupancy, which could limit the potential for economic development based on geothermal resources; these resources are particularly important to the economies of Churchill and Washoe Counties (BLM 2006a).

Solid

Under Alternative A, leasing decisions would be made on a case-by-case basis, so no land would be routinely closed, or have No Surface Occupancy or have seasonal restrictions applied prior to NEPA analysis. These minerals are important contributors to employment and income in Humboldt and Pershing Counties.

Locatable

Under Alternative A, 7,112 acres within areas with high gold potential (mining districts with gold resources, areas prospective and favorable for placer gold, areas favorable and prospective for sediment-hosted gold deposits) would be closed, segregated, or withdrawn. In addition, 1,425,079 acres would have stipulations and seasonal restrictions, which could increase costs for economic development based on gold mining, which in combination with industrial minerals operations, employs 18 percent of the labor force in Humboldt County and 16 percent in Pershing County (BLM 2006a). Mineral development could restrict access to public lands for other uses based on public safety. This could restrict recreational opportunities, however the economic impacts would be minimal. Livestock operations could lose lands available to grazing due to fencing mine sites or construction of mine pits. These impacts would be minimal to livestock operations and benefits from mining would contribute substantial benefits to local communities.

Effects under Alternative B***General***

Of the action alternatives, Alternative B has the largest area open to minerals exploration and development and the smallest acreage either closed or subject to special stipulations that would restrict such operations. Of the action alternatives, it would have the highest potential for economic development relating to minerals development and would be most likely to provide the highest level of expenditure, employment, and income related to minerals within the local and regional economy. However, the potential for this type of development would be lower than under current conditions.

Saleable

Under Alternative B, three clay, stone, and sand and gravel areas would be within closed areas.

Fluid

Under Alternative B, 39,928 acres within former KGRAs or current or historical geothermal lease areas would be closed, and 81,127 acres would have no surface occupancy.

Solid

Under Alternative B, no industrial minerals areas would be closed or would have no surface occupancy or seasonal restrictions.

Locatable

Under Alternative B, 7,112 acres within mining districts with occurrences of silver and gold would be closed, segregated, or withdrawn, and 23 of the 25 mining districts with occurrences of silver and gold would have stipulations and seasonal restrictions. Other socioeconomic impacts would be similar to those described under Alternative A.

Effects under Alternative C

General

Alternative C would have the fewest acres open or open with standard conditions to minerals development and would have the greatest area covered by special stipulations or closure to minerals development. Alternative C, therefore, would have the greatest potential to limit economic development based on mineral operations, to increase operations costs, and to reduce income, employment, and expenditures within the local economy based on this industry. It also would be likely to provide the greatest level of protection to sensitive resources and their associated values to WD visitors and area residents.

Saleable

Under Alternative C, 108 clay, stone, and sand and gravel areas would be within closed areas.

Fluid

Under Alternative C, 421,866 acres within former KGRAs or current or historical geothermal lease areas would be closed.

Solid

Under Alternative C, three industrial minerals areas would be closed.

Locatable

Under Alternative C, 122,820 acres within two of the mining districts with occurrences of silver and gold would be closed, segregated, or withdrawn, and 24 of the 25 mining districts with occurrences of silver and gold would have stipulations and seasonal restrictions.

Effects under Alternative D

General

Of the action alternatives, Alternative D would have an intermediate acreage open or open with standard conditions to minerals development and would have an intermediate area covered by special stipulations or closure to minerals development. Alternative D would have an intermediate potential to limit economic development based on mineral operations, increased operations costs, and reduced income, employment, and expenditures (as compared with current conditions).

Saleable

Under Alternative D, 117 clay, stone, and sand and gravel areas would be within closed areas.

Fluid

Under Alternative D, 76,465 acres within former KGRAs or current or historical geothermal lease areas would be closed, and 74,526 acres would have no surface occupancy.

Solid

Under Alternative D, no industrial minerals areas would be closed, have surface occupancy, or have seasonal restrictions.

Locatable

Under Alternative D, 7,295 acres within two of the mining districts with occurrences of silver and gold would be closed, segregated, or withdrawn, and 22 of the 25 mining districts with occurrences of silver and gold would have stipulations and seasonal restrictions. Other socioeconomic impacts would be similar to those describe under alternative A.

Social and Economic Conditions and Environmental Justice: Effects from Recreation, Visitor Outreach, and Services Management

Effects Common to All Alternatives

All alternatives would provide education and public outreach, which could reinforce social values by improving visitors' connection with WD lands. In addition, all alternatives provide for multiple types of dispersed recreation, which would allow for continued inflow of recreation- and tourism-based revenues in the local economy. Such revenues would be derived from expenditures on such goods and services as lodging, dining, recreation equipment, equipment repairs, fuel, and supplies. Differences among alternatives would result primarily from changes in the mix of uses and the acreage available for these uses. For example, OHV use restrictions could reduce expenditures in the local economies by OHV enthusiasts in the short term; however, expenditures by other user groups could increase as a result.

Effects under Alternative A

Alternative A has the least acreage devoted to management as SRMAs, which would appeal to visitors to WD lands who appreciate lower levels of management in their recreation. Alternative A would have the least acreage closed to OHV travel. Most OHV travel is managed as open under Alternative A, which would provide the greatest area of use for OHV enthusiasts. OHV enthusiasts spent about 11 percent of expenditures by recreation participants within the WD. These expenditures generate direct and indirect income to local proprietors and residents (BLM 2006c). In addition, hunters use OHV travel to access favorite hunting areas and game, and this group contributed 24 percent of expenditures by recreation participants within the WD (BLM 2006c).

However, the level of open OHV recreation could be limiting the amount of more primitive, nonmotorized recreation in the WD, and this group (including such uses as backpacking, camping, fishing, environmental education, horseback riding, bicycling, hiking, picnicking, photography, rock-hounding, viewing scenery, wildlife viewing, and winter activities) contributed 47 percent of expenditures in the local economy by recreation participants within the WD (BLM 2006c).

Identifying new reservoir sites for water-based recreation and encouraging development of sites could promote recreation use and provide increased economic benefits to local communities. Issuing large group special recreation permits also would promote beneficial economic activity, from the purchase of fuel, supplies and services within communities to support these events.

Effects under Alternative B

Of the action alternatives, Alternative B has the most acreage devoted to management as SRMAs, which would appeal to visitors to WD lands who are part of the targeted market for each SRMA. Alternative B also would have the greatest opportunity to generate economic growth from this type of recreation management. Enhancing recreation in the WD by providing experience-based opportunities in SRMAs could increase the number of visitors to the WD, which would increase expenditures in the local economy, increasing income and encouraging the expansion of local business.

Alternative B would have the least acreage closed to OHV travel or limited to existing or designated routes and more lands designated as open, compared to Alternatives C and D. Having more open areas would promote OHV and would encourage expenditures by this recreation group and by hunters, who use OHV travel to hunt, benefiting the local economy.

This alternative promotes public information, which would consequently promote visitation of public lands, providing economic benefits.

Effects under Alternative C

Of the action alternatives, Alternative C would have the least acreage devoted to management as SRMAs, which would appeal to visitors to WD lands who appreciate lower levels of management in their recreation decisions. However, Alternative C would be the least likely to generate economic growth from recreation enhancement, described under Alternative B.

Alternative C would have the most acreage closed to OHV travel and limited to existing or designated routes; there would be no open OHV areas. Therefore, Alternative C would have the greatest potential for increased OHV restrictions to reduce expenditures by this recreation group and by hunters. However, Alternative C is the most likely to encourage more primitive nonmotorized recreation in the WD due to the reduction in open OHV travel.

Effects under Alternative D

Alternative D would have the same effects as those under Alternative B with respect to SRMAs. Under Alternative D, the acreage closed to OHV travel and that with OHV travel limited to existing or designated routes would be intermediate between Alternatives B and C. The effects of the reduction in open OHV travel would be similar to those described for Alternative B; however, Alternative D could be more likely to affect expenditures due to the greater area of OHV restrictions.

Social and Economic Conditions and Environmental Justice: Effects from Renewable Energy Management

Effects Common to All Alternatives

All alternatives would provide for the development of renewable energy, which could provide additional employment and income in the local area.

Effects under Alternative A

Maintaining existing exclusion areas would limit the potential for renewable energy development and the consequent income and employment that renewable energy could generate within the local economy.

Effects under Alternative B

Alternative B would have no exclusion areas for renewable energy development, which would maximize the potential for such development and for the consequent employment and income that could be generated by the industry.

Effects under Alternative C

Alternative C would have the most acreage designated as exclusion zones, which would have the greatest potential to limit renewable energy development and the consequent income and employment that renewable energy could generate within the local economy.

Effects under Alternative D

Alternative D would have fewer areas designated as exclusion zones, compared to Alternative C. This would result in a lower potential to limit renewable energy development and the consequent income and employment that renewable energy could generate within the local economy than under Alternative C.

Social and Economic Conditions and Environmental Justice: Effects from Transportation and Access Management

Effects Common to All Alternatives

Continued access to grazing, minerals operations, energy development and recreation would allow for the continued economic growth and contribution of these industries within the WD.

Effects under Alternative A

Improving and/or constructing roads would improve access, providing benefits to mineral and energy operations through increased efficiency and less vehicle wear and tear. The improved access provided by road improvements could encourage visitor use and increase expenditures within local economies. Decommissioning roads that are having negative environmental effects on protect habitat and sensitive species could remove access to these areas, which could increase operational costs; however, this action would protect sensitive resources and their associated non-market values. Decommissioning roads could discourage some visitors, which could decrease expenditures and income in the local economy.

Effects under Alternative B

Alternative B is similar to Alternative A. However, roads would not be decommissioned unless alternative access is provided. This would reduce operational costs, as compared to Alternative A, but would provide less protection of sensitive resources and their associated non-market values.

Effects under Alternative C

The socioeconomic effects from transportation and access management under Alternative C would be the same as those identified under Alternative A.

Effects under Alternative D

The socioeconomic effects from transportation and access management under Alternative D would be the same as those identified under Alternative A.

Social and Economic Conditions and Environmental Justice: Effects from Lands and Realty Management

Effects Common to All Alternatives

All alternatives would make lands available for disposal to improve the efficiency of managing high resource value lands, which could improve management of the industries that are important on BLM lands and that provide income and employment in the WD and improve management of sensitive resources with high non-market values. Development on these disposed lands could increase the tax base and provide employment opportunities and income in the local economy. This could enable local governments to better handle the pressures of increasing population, the increasing need for public services and facilities, and increasing public demand for recreation. Converting public lands to private may temporarily reduce open land property values.

Renewable energy development would not occur in ROW exclusion areas, which could result in a decrease in the potential for economic growth based on development of this resource.

Effects under Alternative A

Under Alternative A, 2,989,030 acres are identified as suitable for disposal, subject to disposal criteria within Zone 3. Assuming this area would be suitable for disposal and development could occur on all of the land, the assessed value for local governments within the WD would increase by \$3,736,288. Development of this land would increase its assessed value and could generate economic growth.

Effects under Alternative B

Alternative B has the greatest area suitable for disposal, subject to disposal criteria. Assuming all 2,128,543 available acres would be suitable for disposal and that all of the land could be developed, the assessed value for local governments within the WD would increase by \$2,660,679. Development of this land would increase its assessed value and could generate economic growth.

The potential for economic growth based on renewable energy development within the WD is greatest under Alternative B since no ROW exclusion areas are identified.

Effects under Alternative C

Alternative C proposes the least area suitable for disposal, subject to disposal criteria. Assuming all 1,215,963 available acres would be suitable for disposal and that all of the land could be developed, the assessed value for local governments within the WD would increase by \$1,519,954.

Development of this land would increase its assessed value and could generate economic growth. Alternative C would require no net loss or net gain in public land acreage within WD. Therefore, the property tax base would not increase as a result of increased taxable acreage from land tenure adjustments. In addition, the potential for rural community growth could be limited by this requirement. Management of ROW avoidance and exclusion areas would prohibit uses in areas and increase costs to develop projects especially for some minerals, rights of ways, and renewable energy projects. Local economics would not benefit from increased jobs and revenue generated by these types of projects. The degree of impacts would be dependent on the number of acres delineated as avoidance and exclusion areas.

Effects under Alternative D

Approximately 1,350,263 acres would be suitable for disposal under Alternative D, subject to disposal criteria. Assuming all available acres would be suitable for disposal and development could occur on all of the land, the assessed value for local governments within the WD would increase by \$1,602,449. Development of this land would increase its assessed value and could generate economic growth. Impacts would be similar to those identified under Alternative C.

Social and Economic Conditions and Environmental Justice: Effects from ACEC/RNA Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from ACEC/RNA management.

Effects under Alternative A

There would be minimal socioeconomic impacts, as the current ACEC is an area comprised of only 60 acres.

Effects under Alternative B

The effects of ACEC/RNA management under Alternative B would be similar to those identified under Alternative A.

Effects under Alternative C

Under Alternative C, four ACECs would be designated. Increased operational costs could occur to mineral and energy development to develop mitigation measures. Fluid, saleable, and solid mineral and energy development would be precluded because ACECs also are defined as exclusion areas. No economic benefit from mineral and energy development would be realized within ACECs under Alternative C. Local economies could be affected due to reduced expenditures and employment, which could be offset by the protection of the sensitive resources and their associated value to society that are associated with these ACECs.

Effects under Alternative D

The effects of ACEC/RNA management under Alternative D would be similar to those identified under Alternative C.

Social and Economic Conditions and Environmental Justice: Effects from Backcountry Byways Management

Effects Common to All Alternatives

Backcountry byways would stimulate vehicle travel, which would promote the purchase of goods and services by these travelers, benefiting local economies. These effects would increase over time as more retirees visit areas via vehicle travel.

Social and Economic Conditions and Environmental Justice: Effects from National Historic Trails Management

Effects Common to All Alternatives

Trails management may increase operational costs to mitigate impacts on trails.

Effects under Alternative A

Increased operational costs resulting from mitigating impacts on trails would be minimal under Alternative A.

Effects under Alternative B

NSO restrictions on fluid and other leasable minerals and closures to commercial saleable minerals could increase costs and decrease earnings for the individual mineral and energy developments.

Effects under Alternative C

Closure to minerals activities under Alternative C would be more likely than Alternative B to increase costs and decrease earnings for individual mineral and energy development operations. This is because national historic trails management under Alternative C would be the most restrictive of all the alternatives to these operations.

Effects under Alternative D

The level of restrictions (NSO and closures) under Alternative D would be intermediate between Alternatives B and C. Therefore, the potential level of socioeconomic effect would be intermediate between Alternatives B and C.

Social and Economic Conditions and Environmental Justice: Effects from Wild and Scenic Rivers Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from WSR management.

Effects under Alternative A

Under Alternative A, five NWSRS eligible segments would be managed according to interim protective measures. This would prohibit development and uses such as mineral and energy development and rights-of-way along these segments to protect Outstandingly Remarkable Values,

as outlined in Section 1 (b) of the Wild and Scenic Rivers Act. Implementation of mitigation measures may increase operational expenses which may reduce local expenditures and other economic benefits; however, protecting the North Fork of the Little Humboldt, Washburn Creek, and Crowley Creek would preserve fish habitat, which could benefit fisheries in and downstream of the protected area and scenic recreation values. Improved fisheries could bring in greater fishing visitation, and improved scenic values would benefit and potentially increase use by visitors who enjoy nature-related tourism. Although there is no market value for preserving fish habitat, the potential increased fishing opportunities that it indirectly could provide does have a value in the local economy. For example, the BLM's public land statistics data estimated that 201,000 anglers spent an average of \$1,233 per angler in fiscal 2006 in Nevada (a total of approximately \$248 million) (BLM 2007d).

Effects under Alternative B

There would be no impacts on social and economic conditions or environmental justice from WSR management under Alternative B.

Effects under Alternative C

Under Alternative A, five NWSRS eligible segments would be managed as though they were congressionally designated at their tentative classifications (Alternative C). The effects of this management would be the same as those described under Alternative A.

Effects under Alternative D

Under this alternative, there likely would be no impacts on social and economic conditions or environmental justice from WSR management as long as WSA, priority habitat, and priority watershed management, as outlined in the remainder of the RMP, are implemented. In the case that these management actions are not implemented or are removed after implementation, interim protective management measures would be implemented within the 13,583 acres of eligible WSR corridors, which would have effects identical to those described under Alternatives A and C.

Social and Economic Conditions and Environmental Justice: Effects from Wilderness Study Areas and Lands with Wilderness Characteristics Management

Effects Common to All Alternatives

Restrictions applied to mining operations, energy development, and commercial recreation could increase operational costs or preclude development to protect WSAs. These increased costs would result in lower incomes for these operations and potential reductions in expenditures within local economies; however, protecting the resources for which the WSAs were designated also would protect their values for visitors and area residents, which could exceed the reduction in incomes and expenditures.

There would be no impacts on socioeconomic resources from wilderness characteristics management under Alternatives A, B, and D; no management actions would alter the economic activities within the WD.

Effects under Alternative A

Based on BLM Manual #6330 Management of Wilderness Study Areas (BLM 2012e) and 3802 regulations, mining operations would incur increased expenses for permits to operate within WSAs. Other uses such as energy development could be precluded from development within WSAs. Restrictions also could apply to commercial recreation use, since “minimum tool restrictions” would apply. These impacts would vary based on the nature and scope of required restrictions and mitigation measures. Local economies could be affected due to reduced expenditures and employment.

Effects under Alternative B

The effects from WSA and wilderness characteristics management under Alternative B would be the same as those identified under Alternative A.

Alternative C

The effects from WSA and wilderness characteristics management under Alternative C would be the same as those identified under Alternative A.

Closing lands with wilderness characteristics to minerals leasing, saleable mineral disposal, and ROWs could restrict the level of economic activity that could occur in oil and gas, saleable minerals, solid minerals, geothermal, and wind and solar energy development in these areas. Only 238 acres of lands with wilderness characteristics are under competitive lease for oil and gas. Historic leases within these areas covered approximately 50,313 acres; however, all of these leases are now closed. Therefore, economic activity related to oil and gas development would be unlikely to be affected by these closures and exclusions. About 0.03 percent of areas open to saleable mineral development and 0.03 percent of areas open to solid minerals development would be affected by management for wilderness characteristics. Therefore, the level of economic activity generated by developing these minerals could be curtailed, depending on the presence of these minerals in lands with wilderness characteristics. Approximately 7,420 acres of the land in authorized or pending geothermal leases, which is about 4.2 percent of the WD total competitive geothermal leases. About 6.5 percent of all WD lands with high solar PV or CSP potential lie within lands with wilderness characteristics. Therefore, economic activity related to geothermal and solar energy development would be unlikely to be influenced by these closures and exclusions. Because approximately 0.3 percent of WD lands with high wind potential are within lands with wilderness characteristics, management of these lands would be more likely to affect economic activity related to wind energy development.

Effects under Alternative D

The effects from WSA and wilderness characteristics management under Alternative D would be similar to those identified under Alternative A. This alternative provides additional means to protect WSAs if released by Congress. Implementing other designations could increase operational costs and impacts on local economies by reducing expenditures and employment, depending on the type of designation.

Social and Economic Conditions and Environmental Justice: Effects from Watchable Wildlife Viewing Sites Management

Effects Common to All Alternatives

Under all of the alternatives, establishing watchable wildlife viewing sites would not measurably affect the social and economic activities that occur within the WD, including access to traditional sites, recreation, grazing, mining, and renewable energy resource development. Wildlife viewing sites would encourage more visitation into undeveloped areas. This may benefit local economies that provide goods and services. These benefits are expected to be minimal.

Social and Economic Conditions and Environmental Justice: Effects from Public Health and Safety Management

Effects Common to All Alternatives

Under all of the alternatives, public health and safety management would minimize the potential for environmental justice effects. Maintaining a database of hazardous conditions, removal and mitigation of dangerous or hazardous substances, public education, restriction of public activities in unsafe areas, and providing infrastructure when needed to protect public safety would minimize the potential for disproportionately affecting children, minorities, and low-income groups by protecting all WD visitors. In addition, protecting public safety, providing law enforcement, removing hazardous materials, and providing public information would stabilize recreation use and attitudes, which could benefit local economies. Recreation users would be encouraged to buy goods and services to ensure safety and would continue to use public lands to recreate, since they would feel reassured that they could do so in a safe manner. Indirect employment and economic benefits could also include fewer recreation-oriented injuries, which could result in fewer lost work days due to injuries. Constraining or restricting public activities on public lands also could restrict access to minerals and renewable resources and prevent the establishment of renewable energy ROWs. Requirements for fencing, signing, and other actions to protect public safety could increase the costs of minerals operations and renewable energy development. These effects on local economies from public health and safety management would be minimal.

Social and Economic Conditions and Environmental Justice: Effects from Sustainable Development Management

Effects Common to All Alternatives

There would be no effects common to all alternatives from sustainable development management.

Effects under Alternative A

Sustainable development is not addressed under Alternative A, and the potential for the resulting continued economic activity would not be captured under Alternative A.

Effects under Alternative B

The potential for post-operation reuse of public lands could allow for continued economic use of sites of previous operations, such as mining, allowing for continued productivity, employment, and income

to be derived from the sites. Economic development on sites that would be difficult and potentially costly for the WD to manage would include participation from communities to determine the type of development that would be most beneficial to them. Reuse of these sites could help to provide economic diversity to offset the cyclic nature of the local economy (the boom and bust cycle associated with raw materials industries). Allowing public land disposal to facilitate sustainable development would improve commercial operation efficiencies and provide positive economic benefits.

Effects under Alternative C

The effects from sustainable development management under Alternative C would be the same as those described under Alternative B, except that disposal for reuse would be limited to maintaining no net loss of acreage within the WD. This restriction could limit the potential for commercial economic growth, but it would ensure that lands would be available for recreation, a significant industry in the local economy, and would remain in the public trust. Alternative C also would limit disposal of public lands, even if the disposal would provide a greater public benefit than if those lands were rehabilitated. This restriction also could preclude commercial development and limit socioeconomic benefits to communities from commercial uses, including restricting potential increases in the local tax base and in business activities. However, other benefits to the communities could be derived from recreation uses if these lands were rehabilitated.

Effects under Alternative D

The effects from sustainable development management under Alternative D would be the same as those described under Alternative B.

Social & Economic Conditions and Environmental Justice: Cumulative Effects

Past and Present Actions

Past and present impacts from management of livestock include allocating forage for grazing. Grazing of livestock has contributed to the incomes of local permittees and has generated revenues for local industries that support livestock grazing. Minerals, lands and realty, and renewable energy developments have provided jobs and increased the need for services that support mining within local communities. Recreation use has stimulated local economies as recreationalists have purchased fuel, food, commodities and services locally. Management of special status species has included site specific mitigation measures to minimize, reduce, or avoid impacts on sensitive species. These mitigation measures have increased costs to applicable land users. There are minor impacts caused from WHB management. Local communities may receive minor benefits from visitors.

Reasonably Foreseeable Actions

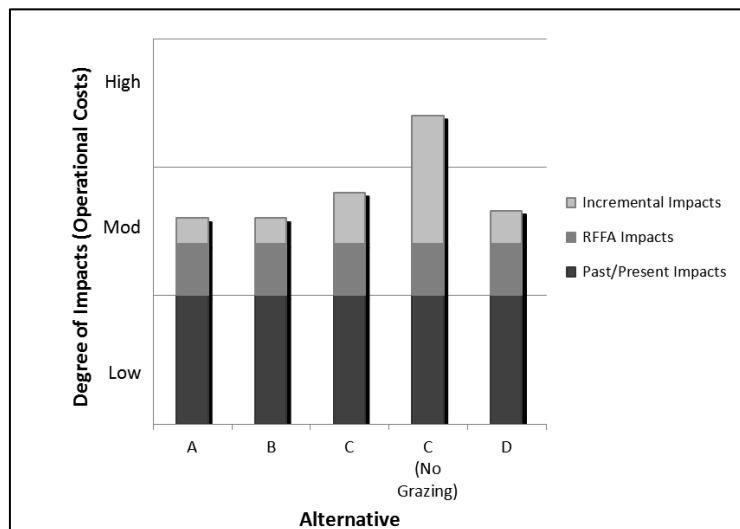
Impacts would be similar to those identified under the past and present analysis for livestock grazing except for the no grazing option. Not permitting grazing would create loss of jobs, loss of incomes, and would decrease revenues to local communities. Increased opportunities for minerals, lands and realty, and renewable energy developments would increase new jobs and stimulate local economies. Increasing recreation use would also increase demand for local services. Special status species management would include designation of areas where certain uses would be limited or prohibited.

Local economies would not receive benefits such as increasing employment or need for additional services depending on the number of acres designated that have use restrictions.

Incremental Cumulative Impact – Combined Past, Present, Reasonably Foreseeable Actions – All Alternatives

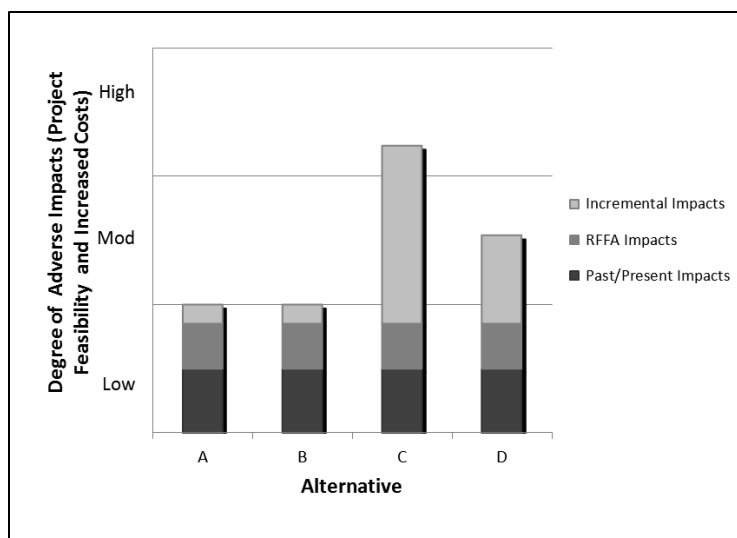
Incremental effects would remain similar for livestock grazing as forage allocations would remain at existing levels, except for the no grazing option which would cause local economies to decline (Figure 4-11). Potential increases in minerals, lands and realty, and energy development would likely continue to increase, promoting local economies. However, areas designated with use restrictions would limit local economies, jobs and services (Figure 4-12). Impacts would vary based on the size and location of designated areas. Recreation uses would continue to expand with population growth within the state. Social and economic impacts related to sustainable development would level boom/bust economic cycles associated with mining. Reuse of areas by mining or other industries would prolong employment and maintain services within the community. Reuse would also reduce environmental impacts associated with surface disturbance as areas previously disturbed would be used versus areas not previously disturbed.

Figure 4-11. Cumulative Impacts on Cost to Provide Forage by Alternative



Degree of Impact Assumptions: No grazing would increase costs to provide forage.

Figure 4-12. Cumulative Adverse Impacts on Project (Minerals, Energy, Rights-of-Way) Feasibility and Increased Costs of Development from Proposed Use Restrictions by Alternative



Degree of Impact Assumptions: Proposed use restrictions within Priority Wildlife Habitat areas, Priority Watersheds, SSS management, and ACECs would limit project feasibility and increase costs for development.

4.6 UNAVOIDABLE ADVERSE IMPACTS

Section 102(C) of NEPA requires disclosure of any adverse environmental effects that cannot be avoided should the proposal be implemented. Unavoidable adverse impacts are those that remain, following the implementation of mitigation measures, or those for which there are no mitigation measures. Virtually all potential unavoidable adverse impacts are generally long term, indirect, and difficult to quantify. Some unavoidable adverse impacts would occur by implementing the RMP and from the proposed management under one or more of the alternatives. Others result from everyday use of public lands within the planning area. The alternatives were developed to respond to these impacts and to be protective of the resources, while allowing land use to be as diverse as possible.

Continuing to allow surface-disturbing and disruptive activities, as required by the BLM multiple-use mandate, would result in unavoidable adverse impacts, sometimes to multiple resources simultaneously, as described below. Although these impacts would be mitigated to the extent possible, unavoidable damage is inevitable. Restoration activities would be the primary cause of unavoidable adverse impacts from management actions, while public uses, such as livestock grazing, mineral development, and OHV use, would be the primary causes of unavoidable adverse impacts by the public.

Permanently converting vegetative resources to other uses, such as transportation and mineral and energy development, reduces the quantity of vegetation resources and thus could inadvertently displace wildlife through a decrease in the quantity and quality of forage.

Energy and mineral resource extraction on public lands potentially creates visual intrusions, soil erosion, compaction problems, loss of vegetation cover, and damage or destruction of cultural and paleontological resources.

Portions of the resource area with increased visitation and therefore more intense recreational use would continue to experience scarring, increased soil erosion, and loss of vegetation. Although these latter impacts would be unavoidable, if they are concentrated in areas already disturbed, this would reduce the spread of impacts from increased visitation to more remote or less frequented areas. However, changes in the amount of recreational visitation and patterns of use could also result in increased conflicts between users, unanticipated changes in resource conditions, vandalism, and illegal collection of cultural resources. Although mitigation measures could be implemented for scientific data recovery of cultural resources, the impacts on areas of any excavation would be unmitigable. The number of sites anticipated to be inadvertently damaged is unknown but is directly proportional to the acreage disturbed. Natural processes, such as erosion and natural decay or deterioration, could also result in unmitigated damage to cultural resources.

Conflicts between user types, such as recreationists who seek more primitive types of recreation and motorized vehicle users who share the same recreation areas, are unavoidable adverse impacts. As recreation demand increases, recreation use would disperse to other parts of the planning area, which could create conflicts with previous uses of those areas. Under alternatives in which mineral development is expected to be higher, recreation use would be transferred from those areas, which would increase the extent and frequency of conflict between these incompatible user groups. Unavoidable adverse impacts would occur, even though attempts are made to minimize these impacts by limiting the protection level necessary to accomplish management objectives and by providing alternative use areas for impacted activities.

Unauthorized OHV travel could cause scarring, increased soil erosion, and loss of vegetation cover. Introduced weeds could increase the likelihood of fires and could reduce canopy coverage, leaving soils subject to increased erosion. Additional soil erosion would result from any facility developments, including recreation sites, livestock water and other range improvements, and utility and road facilities that are not properly restored even after mitigation measures are applied. Large-scale, stand-replacing wildland fires are expected to occur within the planning area over the life of the RMP; these would quickly change the habitat value for biological resources, resulting in the decline of habitat quality and the scenic quality of the landscape, without regard to visual resource objectives.

Unavoidable adverse impacts would result from the accidental or unauthorized introduction of exotic plant or animal species, either from OHV use or other vectors, which in turn could harm or cause loss of populations of native plants or animals. Ecosystem components could be impacted if fire-prone areas are not treated before a high-intensity wildland fire. If fuels are not treated, the risk of loss to life and property would be higher as rural growth expands.

In addition, unavoidable adverse impacts would result from implementing proposed restrictions on recreation, livestock grazing, and other resource uses to protect sensitive resources and other values. These restrictions would lessen the ability of operators, permittees, individuals, and groups to use public lands and could increase operating costs.

Competition for habitat resources is anticipated among wildlife, livestock, and WHB. The extent of the impacts would vary by season and drought cycle. Although there might be short-term periods of significant impacts, long-term management would ensure that these uses are compatible to the extent possible.

4.7 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Section 102(2)C of NEPA requires a discussion of any irreversible or irretrievable commitments of resources from implementing the RMP. Implementing actions in accordance with the selected alternative may result in impacts that could be irreversible or irretrievable or both.

Irreversible commitments of resources refer to the loss of future options and apply primarily to the effects of nonrenewable resources, such as minerals, cultural resources, and soils that cannot be regained. Examples are the extinction of a species, disturbance of protected cultural resources, or the removal of mined ore. An irretrievable commitment of resources involves the loss of production, harvest, or use of natural resources, such as any locatable mineral ore, or oil and gas, over time. Examples are the temporary loss of timber productivity in forested areas that are kept clear for use as a power line ROW or road.

Implementing any of the management plan alternatives would result in some impacts that could be characterized as irreversible and irretrievable commitments. For most impacts, the RMP would provide objectives for resource management and guidance for future activity and implementation-level decisions that minimize the potential for irreversible and irretrievable impacts. Some localized resources could be disrupted but could be mitigated. However, implementing the alternatives would result in some irreversible or irretrievable losses, which are described below.

Livestock forage production may be lost in an area that is undergoing restoration or that was subject to a wildfire. Once the area is restored, forage production would increase and livestock grazing could resume. In this case, the production lost is irretrievable, but the action is not irreversible.

Mineral and energy development could result in an irreversible loss of vegetation resources, alter soils and remove wildlife habitat and livestock forage through construction of roads, mine pits, infrastructure, waste dumps and other facilities. Reclaiming disturbed areas would reduce the magnitude of these impacts and in some cases improve conditions. However, some outcomes would be irreversible or irretrievable. Examples of the latter are as follows:

- Changes in wildlife migration patterns and displacement of local species populations during the activities, causing an irreversible loss or modification of wildlife habitat, affecting species composition and use; and
- An irretrievable loss of nonrenewable commodities mined such as gold and other metals.

Visual characteristics near mining sites could be irretrievably lost during development and operation; that is, opportunities to view undisturbed settings would be lost during either restoration treatments or mineral activities, and these would be irretrievable. Slight increases in sediment, salinity, and nonpoint source pollution from these activities might also result in an irretrievable degradation of water quality. The extraction and development of mineral resources results in the irretrievable and irreversible loss of those minerals. The withdrawal of areas from leasable, locatable, and saleable mineral entry would cause an irretrievable loss of mineral extraction during the life of the RMP.

Changes in vegetation communities from drought, wildfire, cheatgrass invasion, invasive plants, or restoration treatments may not be reversible or may be reversible only after many decades. Some changes would be irretrievable. Changes in vegetation communities that would result from restoring or not restoring areas may be irreversible or may be reversible only after many decades. Invasion by

cheatgrass and other noxious or invasive weeds may be irreversible. The resources committed to manage weeds would be irretrievable. Wildlife that depend on affected habitats might be displaced and populations might be reduced as carrying capacity of the range is reduced. Irreversible and irretrievable losses of wildlife habitat indirectly reduce the amount of suitable special status species habitat. However, management prescriptions and mitigations prescribed under the alternatives are intended to reduce the magnitude of these impacts and would restore some of the soil, vegetation, and habitat lost. Effects on special status wildlife or plants from authorized and unauthorized activities, wildfire, invasive plants, or restoration treatments may be irreversible.

Construction of roads, well pads, and other transportation infrastructure improvements create an irretrievable loss of habitat and impair important visual elements, particularly near communities.

Stand-replacing fires might cause an irreversible loss of some key ecosystem components. Loss of soils following wildfires, or from erosion during restoration treatments, would be irretrievable. The effect of a high intensity wildfire or one covering many acres would be reversible only after several decades. Resources committed for fire suppression and rehabilitation would be irretrievable. Changes in wildlife habitat from wildfire, invasive plants, or restoration treatments may be irreversible or may be reversible only after many decades.

Scarring of the landscape resulting from authorized and unauthorized OHV use can be irreversible.

Undiscovered cultural resources could be unintentionally affected by management activities. Cultural resources are by their nature irreplaceable, so altering or eliminating any such resource, be it National Register eligible or not, represents an irreversible and irretrievable commitment. Authorized mitigation of cultural sites before disturbance and unauthorized collecting and vandalism would be an irreversible commitment of the resource. Authorized and unauthorized collection of fossils would also be an irreversible commitment of the resource.

The exact nature and extent of any irreversible and irretrievable commitment of resources cannot be defined due to uncertainties about location, scale, timing, and rate of implementation, as well as the relationship to other actions and the effectiveness of mitigation measures throughout the life of the plan.

4.8 RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT TO LONG-TERM PRODUCTIVITY

Section 102(C) of NEPA requires a discussion of the relationship between local short-term uses of the human environment and the maintenance and enhancement of long-term productivity of resources. As described in the introduction to this chapter, “short-term” defines those effects that are anticipated to occur while the alternative is being implemented, that is, within one to five years. “Long-term” defines those effects that are anticipated to occur for an extended period after the first five years of alternative implementation but within the life of the RMP, which is projected to be 20 years. These effects could last several years or more.

Regardless of which alternative is selected, management activities would result in various short-term adverse effects, such as increased localized soil erosion, smoke and fugitive dust emissions affecting air quality, damage to vegetation and fish and wildlife habitat, and decreased visual resource quality. Other short-term effects could improve long-term productivity and provide beneficial effects.

Short-term effects, such as those associated with mineral development, could result in long-term degradation of wilderness values and scenic quality. Short-term effects associated with route designations, maintenance, and alterations also could result in long-term effects on recreation and rangeland management activities and wildlife movement within corridors. Alternatively, short-term effects, such as vegetation treatments, would beneficially affect long-term productivity for wildlife and rangeland management by increasing available forage. Short-term effects of wildland fire management and vegetation treatments could result in long-term improvements for scenic quality.

Management actions and best management practices minimize the effect of short-term uses and reverse the change during the long term. However, BLM lands are managed to foster multiple uses, and some long-term productivity impacts might occur regardless of management approach.

Surface disturbing and disruptive activities, including mineral and energy development, dispersed recreation, livestock grazing, infrastructure development, and human use, would result in the greatest potential for impacts on long-term productivity. The disturbance of soils, vegetation, and wildlife habitats from minerals exploration and extraction and livestock grazing, as well as from recreation use, would reduce the long-term productivity of the environment in local areas where revegetation or restoration of the natural environment could not be fully realized over time.

CHAPTER 5 – CONSULTATION AND COORDINATION

5.1 INTRODUCTION

This chapter describes the public outreach and participation opportunities that have occurred throughout the development of this Resource Management Plan/Environmental Impact Statement (RMP/EIS), and the coordination and consultation efforts with tribes, government agencies, and other stakeholders that have transpired to date. It includes a list of preparers of the document and the agencies, organizations, and individuals that have been involved in the development of the RMP/EIS.

5.2 PUBLIC COLLABORATION AND OUTREACH

5.2.1 Scoping Process

Scoping is the term used in the Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR], Part 1500 et seq.) to define the early and open process for determining the scope of issues to be addressed in the planning process. The scoping process gets the public involved in identifying significant issues of land use management actions. The process also helps identify any issues that are not significant and that can thereby be eliminated from detailed analysis. The list of stakeholders and other interested parties is also confirmed and augmented during the scoping process.

Notice of Intent

The Notice of Intent (NOI) is the legal document notifying the public of the Bureau of Land Management's (BLM) intent to initiate the planning process and to prepare an EIS for a major federal action. The NOI initiated the scoping process and invited the participation of the affected and interested agencies, organizations, and members of the general public to participate in the process in order to develop the scope and significant issues to be addressed in the planning alternatives and analyzed in the EIS. The NOI for the RMP/EIS was published in the *Federal Register* on March 25, 2005.¹ The scoping period for receipt of public comments ended on May 24, 2005.

Press Releases

The BLM used local and regional newspapers, throughout the planning area, to disseminate information on the RMP scoping and planning process. The BLM prepared press releases to notify the public of the project, to announce the open houses, to request public comments, and to provide contact information. Press releases were printed in the following newspapers during the week of April 25, 2005:

- *This & That* (Gerlach, Nevada);
- *The Humboldt Sun* (Winnemucca, Nevada);
- *Lovelock Review-Miner* (Lovelock, Nevada); and

¹"Notice of Intent to Prepare an Environmental Impact Statement (EIS) and to Initiate the Public Scoping Process." *Federal Register* 70, no. 57 (March 2005): 15,348-15,349.

- *Reno Gazette-Journal* (Reno, Nevada).

Additional press releases were issued to announce availability of the Draft RMP/EIS and Proposed Final RMP/EIS².

Scoping Meetings

The BLM held public scoping meetings in Winnemucca on May 2, in Lovelock on May 3, in Gerlach on May 4, and in Reno on May 5, 2005. The BLM provided the local media with press releases announcing the time, location, and purpose of these meetings as described above.

The scoping meetings were presented in an open house format, allowing the public to receive information, ask questions, and provide input. Fact sheets and handouts about the project and a map of the planning area were provided, as was a list of the preliminary planning criteria and anticipated key issues related to the project. Single-page summaries of each resource issue were provided as convenient references to take from the meetings. Site and resource maps were displayed illustrating the current situation and management techniques practiced among different resources and land areas. A slide presentation highlighted key issues and summarized the planning process. Prominent, handicapped-accessible local facilities in informal settings were chosen as venues to encourage broad participation.

Attendees were encouraged to mail in written comments and questions or to fill out comment cards. Copies of the briefing package and planning criteria were also made available at the comment table.

5.2.2 Project Web Site

The BLM has posted information about the planning process and various documents on the Web at http://www.blm.gov/nv/st/en/fo/wfo/blm_information/rmp.html. The BLM continuously updates the Web site with information, documents, and announcements.

5.2.3 Newsletters

The BLM has published newsletters throughout the course of the RMP/EIS process and are posted on the BLM Web site. Participants also may request to receive newsletters through e-mail. The newsletters remind the public of how they can comment and get involved and includes a calendar of events. Each edition addresses in detail issues of concern identified during the scoping process. On March 23, 2005, the first project newsletter was mailed to over 1,600 individuals and organizations that had been interested in or participated in other activities hosted by the Winnemucca District (WD). The purpose of this newsletter was to inform them of the WD RMP planning effort, the location of the open houses, and the opportunity to comment. In addition, the newsletter gave the public various methods to submit their comments, including a dedicated e-mail address (wdrmp@blm.gov³), a fax line ([775] 623-1503), and the BLM WD address to mail comments. A second newsletter was distributed in March 2007 that provided a project update. A third newsletter was distributed in September 2011. This newsletter provided a project update and information applicable to the development of the Proposed RMP/Final EIS.

² “Notice of Availability of the Draft Winnemucca District Draft Resource Management Plan and Environmental Impact Statement. Federal Register Vol 75, No. 122 (June 2010): FR Doc 2010-15326.

³ Formerly “comments@wformp.com”

5.3 CONSULTATION AND COORDINATION

The WD RMP will provide guidance for a vast area of public land in Nevada and necessarily requires the coordination of a wide variety of organizations with interests in the area. Among those are governmental bodies that create, administer, and monitor policy for these, as well as adjacent, lands. The BLM established a coordinated effort in developing the RMP by seeking the active participation of these parties. The following sections document the BLM's consultation and coordination efforts during the preparation of the RMP/EIS. Consultation is an ongoing effort throughout the entire RMP process.

5.3.1 Cooperating Agencies

On February 16, 2005, the BLM invited 33 local, state, federal, and tribal representatives to participate as cooperating agencies for the RMP. Of these, nine agencies accepted this offer to participate in the RMP planning process as cooperating agencies:

- Humboldt County;
- City of Winnemucca;
- Washoe County;
- Pershing County;
- N-2 Grazing Board;
- Nevada Department of Agriculture;
- Nevada Department of Wildlife;
- US Fish and Wildlife Service; and
- US Bureau of Reclamation.

These entities worked with the BLM, sharing special expertise, resources, and provided comment and review of various preliminary draft documents to help forge the development of the Draft and Proposed RMP. Throughout the planning process BLM met and coordinated individually with the cooperating agencies. In addition, combined meetings with all cooperators were held in July 2005, July 2010, and December 2011.

5.3.2 Native American Consultation

Federally recognized Native American tribes have a unique legal and political relationship with the government of the United States (US). Executive Order (EO) 13175 requires federal agencies to coordinate and consult on a government-to-government basis with sovereign Native American tribal governments whose interests may be directly and substantially affected by activities on federally administered lands. Other laws, regulations, guidance, and executive orders require consultation to identify the cultural values, the religious beliefs, the traditional practices, and the legal rights of Native American people, which could be affected by BLM actions on federal lands. These include the National Historic Preservation Act (NHPA) of 1966 (as amended), American Indian Religious Freedom Act of 1978, the Native American Graves Protection and Repatriation Act, Department of the Interior (DOI) Secretarial Order No. 3215 (USDI 2000), 512 Department Manual Chapter 2 (USDI 1995), and BLM Manual H-8160-1 (USDI 1994), and EO 13007 Indian Sacred sites.

All Native American tribes and organizations with interests in the WD planning area were contacted by mail and encouraged to be cooperating agencies. Tribes have been participating in the RMP/EIS process through meetings and other contacts. During follow-up telephone calls to the tribes, each was offered the opportunity to meet with WD representatives or to visit the study area. The BLM met with Native American organizations on May 24, 2005, and May 26, 2005, in Winnemucca and Reno, respectively. During the first meeting, representatives from the BLM met with four tribal representatives from the Fort McDermitt Paiute and Shoshone Tribe, Battle Mountain Band, and Lovelock Paiute Tribe to offer information on developing the RMP and to discuss tribal concerns to be addressed. Similarly, BLM staff met with tribal representatives from the Fort McDermitt Paiute and Shoshone Tribe, Cedarville Rancheria, Susanville Indian Rancheria, and Pyramid Lake Tribe on May 26, 2005. The BLM has continued the Native American consultation process throughout the preparation of the Draft RMP/EIS and Proposed RMP/Final EIS,

With the assistance of a contractor, BLM conducted a confidential ethnographic assessment (Bengston 2006) of the WD planning area. The primary objectives of this study were as follows:

- Conduct a thorough archival and literature review to identify and document Native American traditional occupancy and use of lands and resources, as well as previously recorded Native American places of cultural and religious importance, within the study area;
- Elicit contemporary concerns and recommendations for managing traditional resources and cultural and religious values from tribal leaders, elders, or representatives;
- Document the WD's Native American consultation efforts; and
- Elicit tribal recommendations for managing the lands administered by the WD.

A request for a consultation meeting and copies of the RMP were sent to the following tribes and reservations on July 12, 2010: Battle Mountain Band, Burns Paiute Tribe, Cedarville Rancheria, Confederate Tribes of Warm Springs, Fallon Paiute Shoshone Paiute Tribe, Fort Bidwell Tribe, Fort McDermitt Paiute and Shoshone Tribe, Klamath Indian Tribe, Lovelock Paiute Tribe, Pit River Tribe, Pyramid Lake Paiute Tribe, Reno-Sparks Indian Colony, Shoshone-Bannock Tribes, Shoshone-Paiute Tribes of Duck Valley, Summit Lake Paiute Tribe, Walker River Paiute Tribe, Washo Tribe, Winnemucca Indian Colony, Yerrington Paiute Tribe, and Yomba Reservation. A copy was also sent to the Inter-Tribal Council of Nevada.

Consultation meetings to discuss the RMP occurred with the Fort McDermitt Paiute and Shoshone Tribe in September and December 2010, and Summit lake Paiute Tribe in October 2010. Other tribes declined or did not respond to BLM requests for consultation on the RMP. An additional Native American consultation meeting was held in July 2012.

5.3.3 Cultural Resource Consultation

The BLM has specific responsibilities and authorities to consider, plan for, protect, and enhance historic properties and other cultural properties that may be affected by its actions or actions it permits. The principal federal law addressing cultural resources is the NHPA (16 USC Section 470), and its implementing regulations (36 CFR 800). These regulations, commonly referred to as the Section 106 process, describe the procedures for identifying and evaluating historic properties, for assessing the effects of federal actions on historic properties, and for guiding project proponents

consulting with appropriate agencies to avoid, reduce, or minimize adverse effects. The BLM in Nevada meets its responsibilities under Section 106 and other provisions of the NHPA through a state protocol agreement with the Nevada State Office of Historic Preservation (SHPO). Using authorities developed under a nationwide BLM programmatic agreement, the BLM follows an alternate procedure to the 36 CFR 800 regulations to meet its historic preservation responsibilities. Cultural resource consultation with the SHPO, Native American tribes and interested parties is required under the NHPA and a variety of laws, regulations, guidance, and departmental and executive orders.

The state protocol agreement requires that the BLM invite the SHPO to participate early in the process of preparing or amending land use plans in order to identify cultural resource issues that should be addressed. The BLM met with Alice Baldrice of the Nevada SHPO on February 16, 2007 to present the proposed alternatives. The SHPO was invited but declined to be a cooperating agency for the RMP/EIS. The SHPO has also received copies of consultation correspondence with the Native American tribes. Additional consultations with the SHPO and Indian Tribes also may be required during implementation of individual projects. The BLM met with the SHPO on May 15, 2012 to continue the consultation process in accordance with the state protocol between the BLM and the SHPO. Consultations with the SHPO are ongoing and will be completed before the Record of Decision is signed.

5.3.4 Endangered Species Act Consultation

The Endangered Species Act of 1973 (ESA), as amended, directs every federal agency to ensure that any action it authorizes, funds or carries out is not likely to jeopardize the existence of any listed species or destroy or adversely modify critical habitat. The ESA authorizes federal agencies to enter into early consultation with the US Fish and Wildlife (USFWS) to make those determinations. BLM requested a species list from USFWS of any federally listed, federally proposed, or current federal candidate species that may be present in the RMP planning area on February 8, 2005. Updated species lists were requested on August 27, 2007, March 25, 2010, and January 26, 2012. The most recent list (USFWS 2012) can be found in Appendix D. The BLM initiated formal consultation with the USFWS under Section 7 of the ESA on March 9, 2012. Formal Section 7 consultation was completed on July 27, 2012, when the USFWS provided a Biological Opinion.

5.3.5 Resource Advisory Council

A resource advisory council (RAC) is a committee established by the Secretary of Interior to provide advice or recommendations to BLM management (BLM 2005a). A RAC is generally composed of 15 members of the public representing different facets. The Sierra Front-Northwestern Great Basin RAC includes a panel of mixed expertise ranging from natural resources and Native American culture to mining, transportation, and politics. The group is facilitated by the public affairs officer from the BLM. In March 2005, five new members were incorporated into the WD RAC to replace previous members. The first meeting with the new RAC was held on April 28, 2005 at the WD office. After a presentation of the RMP process highlighting the components and issues of the planning area, preliminary planning criteria, and project status, the RAC elected to form a subgroup to provide assistance and input. The RAC subgroup assisted in developing the alternatives at the following meetings:

- Fernley Nevada on July 11, 2005;
- BLM Carson City District Office on July 29, 2005;
- Winnemucca District Office from September 17-18, 2005;
- Winnemucca District Office from November 11-13, 2005;
- Winnemucca District Office from January 17-18, 2006;
- Winnemucca District Office on March 15, 2006;
- Winnemucca District Office from June 8-9, 2006;
- Winnemucca District Office on November 30, 2006; and
- Winnemucca District Office on January 11, 2008.

BLM continued collaboration among cooperating agencies, the RAC subgroup, and Tribal governments during the preparation of the Proposed RMP. Following issuance of the Draft RMP/EIS, the WD hosted a cooperating agency meeting on December 1, 2011 inviting all cooperating agencies to meet and follow-up individual meetings for cooperators who missed the combined meeting. The purpose of the meeting was to provide agencies with the status of the planning effort, an overview of public comments, and distribute preliminary proposed management actions for review and comment. The BLM also provided the RAC subgroup with the opportunity to review the preliminary proposed management actions for the RMP because they were instrumental in providing information for development of the Draft RMP/EIS. The BLM has continued coordination with Tribal governments through the Native American consultation process.

5.4 DISTRIBUTION AND AVAILABILITY OF THE DRAFT RMP/EIS

Scoping for the Draft RMP/EIS began in March 2005. The first newsletter for the WD RMP was mailed on March 23, 2005, to more than 1,600 individuals from the public, agencies, and organizations that have participated in past BLM projects or requested to be on the mailing list. Recipients of the newsletter and visitors to the scoping open houses were asked to specifically request to stay on the official RMP project mailing list to receive future mailings. In addition, the distribution list was updated throughout the development of the Draft RMP/EIS. The distribution list of agencies, organizations, and individuals who have been a part of the RMP is available in the administrative record.

A Notice of Availability (NOA) for the Draft RMP/EIS was published in the *Federal Register* on June 25, 2010. The NOA initiated a 90-day public comment period. Due to public interest, the BLM extended the comment period an additional 30 days until October 25, 2010. The BLM notified the public of open house meetings via the project Web site and a news release to 33 media sites including newspapers, radio, and television.

The BLM held public comment open houses for the Draft RMP/EIS on four consecutive afternoons and evenings in late July 2010: Monday, July 26 in Winnemucca, Tuesday, July 27 in Lovelock, Wednesday, July 28 in Gerlach, and Friday, July 29 in Reno. All meetings were from 5:00 to 7:00 PM. The goal of the open houses was to inform the public about the Draft RMP/EIS and to obtain further public input on the alternatives that were developed and analyzed. In addition, the WD sought comments on potential impacts resulting from the four alternatives.

At the open houses, displays introduced the various resource topics and presented the four alternatives for the resource topics. Other displays explained the NEPA process and the methods for submitting comments. A slide show looped throughout the open house describing the WD RMP/EIS preparation process.

Public comments were solicited at the open houses, where comment sheets were provided.

5.5 COMMENTS RECEIVED ON THE DRAFT RMP/EIS

5.5.1 Method of Comment Collection and Analysis

The WD Draft RMP/EIS public comment period lasted 120 days and ended October 25, 2010. Individuals were encouraged to submit written comments. Methods of submitting comments included comment forms, letters, facsimiles, and e-mail.

To ensure that public comments were properly registered and not overlooked, the BLM collected all submitted comments and input them into a database. Each comment submission source was categorized as one of the following:

- Federal agencies;
- Local and state agencies;
- Nongovernment agency;
- Business;
- Individual; and
- Tribal.

Each individual substantive comment was labeled and placed into a subcategory based on the subject matter of the comment (e.g., wild horses and burros, water resources). BLM guidance was used in identifying substantive comments. Finally, the BLM's interdisciplinary team responded to the labeled individual substantive comments. These comments and the BLM's responses can be found in Appendix M.

These comments were incorporated into a Draft RMP/EIS Public Comment Summary Report, and the BLM considered them in refining the alternatives, affected environment, and impact assessment for this Proposed RMP/Final EIS.

5.5.2 Summary of Written Comments Received

By the end of the review period, 1,348 comments had been submitted (Table 5-1). These comments were reviewed, summarized in a comment summary report, and considered in preparing this Proposed RMP/Final EIS. It is noteworthy that 30,617 form letters were submitted pertaining to wild horses and burros. These were generated by three separate organizations. Individuals from all over the world were given access to the form and were allowed to submit the form letter from the organizations' web sites through an e-mail link. There were 22,467 submissions through the American Society for the Prevention of Cruelty to Animals (ASPCA), 73 of which were received after the final date to submit comments of October 25, 2010. The form published by the ASPCA

**Table 5-1
Summary of Comments**

Issue Category	Number of Individual Comments	Percentage of Comments	Summary of Comments
Area of critical environmental concern (ACEC)	14	1.04	Expansion of ACEC nominations and designating ACECs for specific species habitat.
Air quality	57	4.23	Air quality and BLM permitted actions. Lack of information on climate change.
Alternatives	62	4.60	Comments on the range of alternatives.
Biology	5	0.37	Managing for biological crusts and salt desert shrub communities.
Cave and karst	1	0.07	Access to cave and karst resources.
Climate change	9	0.67	More details on climate change.
Chapter 1	1	0.07	RMP plan consistency with local and state plans.
Cultural resources	17	1.26	Traditional Cultural Properties and their management.
Cumulative	4	0.30	Level of cumulative impact analysis.
Fish and wildlife	74	5.49	Management of priority habitats.
General	74	5.49	Quality document control of the RMP document.
Geology	10	0.74	Management of unique geologic formations.
Lands and realty	33	2.45	Lands and realty management, including land tenure adjustments and use restrictions.
Livestock grazing	90	6.68	Lands available for grazing, consistency with other local and state plans and the Taylor Grazing Act.
Minerals	97	7.20	Areas open for mineral development and use restrictions.
Paleontological resources	1	0.07	Protection of paleontological resources.
Public health	4	0.30	Public health safety and coordination with local law enforcement.
Purpose and need	2	0.15	Suggestions that section should be clarified with regard to management direction and current ecological status.
Recreation	92	6.82	Off-highway vehicle management and designation of off-highway vehicle routes.
Renewable energy	46	3.41	Recommendations on where to locate renewable energy structures and identification of zones suitable for renewable energy projects.
Sustainable development	1	0.07	Clarification of sustainable development wording.
Scoping process	7	0.52	Relevance of scoping and purpose and need due to time lapse in the RMP process.
Special recreation management area (SRMA)	7	0.52	Management of SRMAs and need for future public involvement.

**Table 5-1
Summary of Comments**

Issue Category	Number of Individual Comments	Percentage of Comments	Summary of Comments
Socioeconomic and environmental justice	2	0.15	Changes in socioeconomic conditions.
Soil	20	1.48	Impacts on soils.
Special status species	33	2.45	Sage-grouse habitat management, surveys, and habitat restoration.
Transportation and access	27	2.00	Road maintenance and access.
Tribal interests	8	0.59	Native American consultation.
Vegetation	76	5.64	Management of vegetation.
Vegetation forest woodlands	13	0.96	Forest health management, protection, and fire suppression priorities.
Vegetation rangelands	15	1.11	Management of fuels, types of vegetation treatments, and coordination.
Vegetation riparian habitat	8	0.59	Riparian vegetation management.
Vegetation weeds	16	1.19	Weed control and integrated pest management.
Visual resources	37	2.74	Visual resource management classification.
Water	58	4.30	Protection of water resources, including quality and availability.
Wild and Scenic Rivers	5	0.37	Protecting Wild and Scenic River values.
Wildland fire management	21	1.56	Wildland fire management, multiple objectives, and suppression priorities
Wild horses and burros	244	18.10	Wild horses and burros management, gathers, and adoption.
Wilderness Study Areas and Characteristics	57	4.23	Identifying and protecting lands with wilderness characteristics.
	1,348	100	

allowed submitters to add additional comments, and 3,837 individuals did so, bringing the number of submissions through the ASPCA to 26,304. In Defense of Animals generated 3,814 letters. Of these, 59 individuals included additional comments, and 143 submissions were received after the final date. An unknown organization generated 499 form comment submissions, 13 of which contained additional comments by the sender, and 66 were received after the final date. Identical form letters were not counted as separate comment submissions. Because of the duplicative nature of these types of comments, they represent one opinion that was mass solicited. Each organization's form allowed individuals to add text to the existing form. Added comments on the forms ranged from concern over the ranching/mining industry and development, concern over how horses are treated during gathering operations, the desire to protect horses and burros, to be kind to wild horses and burros, and to leave them alone. Many of the added comments were in disagreement

with the BLM and its Wild Horses and Burros Program and the use of tax dollars to gather the animals. A few commenters showed support for different aspects of the program.

5.5.3 Comment Letters and BLM Responses

Written comments on the Draft RMP/EIS are contained in Appendix M. This appendix contains public and agency comments and the BLM's responses. Each comment is outlined and coded by affiliation, affiliation type, and the comment number within the letter. A vertical line and the comment code note each separate comment within each letter. The BLM's response to each comment is printed to the right of each comment.

5.6 DISTRIBUTION AND AVAILABILITY OF THE PROPOSED RMP/FINAL EIS

An NOA will be published in the *Federal Register* to notify the public of the availability of the Proposed RMP/Final EIS. The NOA will also outline protest procedures during the 30-calendar-day protest period. The Proposed RMP/Final EIS will be available for downloading from the project Web site at: http://www.blm.gov/nv/st/en/fo/wfo/blm_information/rmp.html. The Proposed RMP/Final EIS will also be available for review at the BLM WD office. Press releases will be issued to notify the public of the Proposed RMP/Final EIS availability. All recipients of the Draft RMP/EIS and all parties who submitted written comments on the Draft RMP/EIS will receive the Proposed RMP/Final EIS in either a hard copy or CD, or they will be able to download it from the Web site. The WD will notify those who previously received the Draft RMP/EIS electronically. The WD maintains the distribution list for the Proposed RMP/EIS, which is available on request.

5.7 LIST OF PREPARERS

An interdisciplinary team (IDT) of resource specialists from the BLM WD prepared this RMP/EIS (Tables 5-2, 5-3). Tetra Tech, Inc. assisted the BLM in preparing these documents and in the planning process (Table 5-4).

Table 5-2
List of Preparers – BLM (Current)

Name	Years of Experience	Role/Responsibility	Education
Robert Burton	10	Soils and Vegetation	BS, Environmental Science
Joey Carmosino	12	Recreation/VRM	MA, Recreation Administration
Amanda DeForest	20	Livestock Grazing, WH&B and Wildlife	BS, Wildlife/Rangeland Management
Mark Hall	20	Native American Concerns/Consultation	PhD, Anthropology MS, Engineering MA, Anthropology BS, Engineering
Jeff Johnson	23	Project Manager – 2003-2006 Project Manager – 2011-2013 Fire Ecology	BS, Conservation of Natural Resources
Marla Kirschbaum	5	GIS	BS, Biology

Table 5-2
List of Preparers – BLM (Current)

Name	Years of Experience	Role/Responsibility	Education
Daniel Kozar	2	GIS	BS, Geography
Whitney Kroschel	1	NEPA Technician	MS, Biological Sciences
Ken Loda	29	Minerals and Geology	BS, Geology
Greg Lynch	12	Fish and Wildlife, Special Status Species	BS, Agriculture/Fishery Science
John McCann	2	Water Resources/Riparian Habitat, Wild and Scenic Rivers	BA, Environmental Studies, BS Geology
Peggy McGuckian	37	Cultural Resources	BA, Anthropology, MA Anthropology
Julie McKinnon	2	Lands and Realty	Lands School
Derek Messmer	18	Livestock Grazing	BS, Resource Management/Forestry and Range Management
Celeste R. Mimnaugh	8	Special Status Species/Wildlife	BS, Environmental Resources in Agriculture
Zwaantje Rorex	5	Planning & Environmental Coordinator	BA, Geography
Gene Seidlitz	21	District Manager	BS, Rangeland Management
Kristine Struck	10	Wilderness/WSA/Lands with Wilderness Characteristics	BS, Outdoor Recreation Management

Table 5-3
List of Preparers – BLM (Prior to 2010)

Name	Years of Experience	Role/Responsibility	Education
Rodger Bryan	32	Project Manager 2009	BS, Wildlife
Bob Edwards	35	Project Manager 2007-2008, 2010, Lands & Realty	BS, Business Management
Mark Ennes	4	Cultural Resource/Paleontology	MA, Anthropology
Ken Detweiler	32	Special Status Species/Wildlife	BS, Wildlife
Craig Drake	19	Water Resources	BS, Resource Management/Hydrology
Glenna Eckel	17	Wild Horses and Burros	BS, Multi-Resource Management
Gerald Gulley	10	Wilderness/WSA	MS, Forest Recreation
Dave Lefevre	5	Recreation	BS, Recreation Management
Matt Varner	5	Fish and Aquatic/Riparian Habitat	BS, Wildlife and Fisheries Management
Mike Zielinski	33	Soils/Vegetation	BS, Resource Management Soils

**Table 5-4
List of Preparers – Contractor**

Contractor—Tetra Tech, Inc.			
Name	Years of Experience	Role/Responsibility	Education
Cindy Adornetto	24	Recreation	MS, Environmental Policy and Mgmt., University of Denver; BS, Natural Resource Mgmt., Colorado State University
Emmy Andrews	8	Document Management, QA/QC	MS, Environmental Management Certificate, GIS, San Francisco State University
Kelly Bayer	17	Fish and Wildlife, Special Status Species, Transportation and Access	BS, Biology and Marine Science, University of Miami
Mike DaSilva	20	Wild Horses and Burros	BA and MS, Biology, Eastern Washington University
Kevin T. Doyle	27	Cultural Resources, Tribal Interests	BA, University of California, Santa Barbara, Continuing Studies in Anthropology, Historic Preservation, and Cultural Resource Management; California State University, Los Angeles; University of California, Los Angeles; University of Southern California, School of Architecture; and University of Nevada, Reno
Yashekia Evans	14	GIS	Geographic Information Systems Certificate in Environmental Analysis, San Francisco State University
Liz Fagen	4	Public Health and Safety	MS, Environmental Engineering, Colorado State University Fort Collins BS, Civil Engineering, University of Wisconsin Madison
Cameo Flood	25	Wildland Fire Management	BS, Forest Resource Management, University of Montana
Derek Holmgren	12	Project Management, Lands and Realty, Visual Resources, Special Designations	MPA and MSES, Environmental Science, Indiana University; BS and BA, Environmental Science, Oregon State University
Cliff Jarman	25	Soils, Geologic Resources, Cave and Karst Resources, Paleontological Resources, Minerals Resources, QA/QC	MS, Geophysics, New Mexico Institute of Mining and Technology BS, Geology, University of New Mexico

**Table 5-4
List of Preparers – Contractor**

Contractor—Tetra Tech, Inc.			
Name	Years of Experience	Role/Responsibility	Education
Genevieve Kaiser	23	Socioeconomics, Renewable Energy, GIS	MS, Energy Management and Policy, University of Pennsylvania; BA, Economics, College of William and Mary; Professional Certification: GIS, University of Denver
Shannon Lindquist	6	Document Management Support	MS, Environmental Studies, The Evergreen State College BS, Ecology and Evolutionary Biology, Sonoma State University
Julia Mates	11	Document Management Support	MA/History/Public History BA/History
Mandi McElroy	10	Document Management Support	MS, Wildlife Ecology and Management/Conservation and Sustainable Development, University of Georgia BS, Wildlife Biology, University of Georgia
Craig Miller	21	Project Management	MS, Wildlife Biology, Clemson University BS, Wildlife & Fisheries Biology, University of Vermont
Cindy Schad	20	Word Processing	BFA, Creative Writing, Emerson College
Bob Sculley	38	Air Resources	MS, Ecology, University of California, Davis BS, Zoology, Michigan State University
Randolph Varney	23	Writer, Editor	MFA, Writing, University of San Francisco BA, Technical and Professional Writing, San Francisco State University
Tom Whitehead	30	Water Resources	MS, University of Arizona BS, California State University Hayward BA, San Francisco State University
Meredith Zaccherio	5	Vegetation, Fish and Wildlife, Special Status Species, Wilderness Characteristics	MA, Biology, Boston University BS, Biology, Binghamton University BS, Environmental Science, Binghamton University
Ann Zoidis	21	Document Management Support, QA/QC	MS, Physiology and Behavioral Biology, San Francisco State University BA, Geology, Smith College

**Table 5-4
List of Preparers – Contractor**

Subcontractor—Environmental Management & Planning Solutions, Inc.			
Name	Years of Experience	Role/Responsibility	Education
David Batts	21	Project Management, NEPA Specialist, QA/QC	MS, Natural Resource Planning, Michigan State University BS, International Development, Lewis and Clark College
Holly Prohaska	11	Project Management, Livestock Grazing	MS, Environmental Management, University of San Francisco; BA, Marine Science, Biological Pathway, University of San Diego
Jennifer Whitaker	10	Socioeconomics, Recreation, BMP Development	MSM, Regis University BS, Public Affairs, emphasis in Natural Resource Management, Indiana University
Subcontractor—Far Western Archaeological			
Name	Years of Experience	Role/Responsibility	Education
Craig Young	20	Archaeologist	PhD, Anthropology, University of Nevada, Reno MA, Anthropology, University of Texas, Arlington
Subcontractor—Bengston Consulting			
Name	Years of Experience	Role/Responsibility	Education
Ginny Bengston	10	Ethnographer	MA, Anthropology, Northern Arizona University BA, Anthropology, University of Washington

CHAPTER 6 – REFERENCES

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CHAPTER 7 – GLOSSARY AND INDEX

7.1 GLOSSARY

ACQUIRED LANDS. Lands in federal ownership that were obtained by the government through purchase, condemnation, gift or by exchange. Acquired lands constitute one category of public lands.

ACTIVITY PLAN. A type of implementation plan (see *Implementation plan*); an activity plan usually describes multiple projects and applies best management practices to meet land use plan objectives. Examples of activity plans include interdisciplinary management plans, habitat management plans, recreation area management plans, and allotment management plans.

ADAPTIVE MANAGEMENT. A process for implementing management decisions that requires monitoring of management actions and adjustment of decisions based on past and present knowledge. Adaptive management applies scientific principles and methods to improve management decisions incrementally as experience is gained in response to new scientific findings and societal changes.

AIR QUALITY STANDARD. The specified average concentration of an air pollutant in ambient air during a specified period at or above the level the public health may be at risk, equivalent to Ambient Air Quality Standard.

ANIMAL UNIT MONTH (AUM). The amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month (approximately 800 pounds of air-dry material per AUM). A full AUM's fee is charged for each month of grazing by adult animals if the grazing animal (1) is weaned, (2) is six months or older when entering public land, or (3) will become 12 months old during the period of use. For fee purposes, an AUM is the amount of forage used by five weaned or adult sheep or goats or one cow, bull, steer, heifer, horse, or mule. The term AUM is commonly used in three ways: (1) stocking rate, as in X acres per AUM, (b) forage allocation, as in X AUMs in allotment A, and (3) utilization, as in X AUMs consumed from Unit B.

ANNUAL PLANT. A plant that completes its life cycle and dies in one year or less.

APPROPRIATE MANAGEMENT LEVEL (AML). A single number that is the high point of an established population range to maintain a thriving natural ecological balance, based on available forage, water, and other resource needs or conflicts (relating to management of wild horses and burros).

AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). An area established through the planning process, as provided in the Federal Land Policy and Management Act (FLPMA) of 1976, where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values; or to fish and wildlife resources or other natural systems or processes; or to protect life and afford safety from natural hazards.

AUGMENTATION. The act of releasing animals or plants to maintain or enlarge an existing population of the same species within a specified area, sometimes called supplemental transplants.

Augmentation includes, but is not limited to, routine game fish stocking or reseeds. (BLM Manual Section 1745).

AVOIDANCE AREA. Areas to be avoided but may be available for location of rights-of-way with special stipulations.

BEST MANAGEMENT PRACTICE (BMP). A suite of techniques that guide, or that may be applied to, management actions to aid in achieving desired outcomes. BMPs are often developed in conjunction with land use plans, but they are not considered a land use plan decision unless the land use plan specifies that they are mandatory. They may be updated or modified without a plan amendment if they are not mandatory (BLM Handbook H1601-1; Glossary).

BIOLOGICAL CRUST. A complex mosaic of living organisms—algae, cyanobacteria (blue-green algae), bacteria, lichens, mosses, liverworts, and fungi—that grow on or just below the soil surface.

BIOLOGICAL TREATMENT. Techniques used to achieve resource benefits by using living organisms (animals, insects, plant pathogens) to control hazardous fuel weeds, or invasive species and/or pests.

CASUAL USE. Activities ordinarily resulting in no or negligible disturbance of the public lands or resources. Specific definitions and examples are given throughout the regulations governing activities on public lands, including in 43 CFR 2801.5, 3200.1, and 3809.5.

CAVE. Any naturally occurring void, cavity, recess, or system of interconnected passages that occurs beneath the surface of the earth or within a cliff or ledge (including any cave resource therein, but not including any mine, tunnel, aqueduct, or other man-made excavation) that is large enough to serve as habitat for wildlife. This term includes any natural pit, sinkhole, or other feature that is an extension of the entrance.

CHECKERBOARD LANDS. Intermixed public domain and private lands that include private, state, local, or federal lands.

CLOSED. Generally denotes that an area is not available for a particular use or uses; refer to specific definitions found in law, regulations, or policy guidance for application to individual programs. For example, 43 CFR 8340.0-5 sets forth the specific meaning of “closed” as it relates to off-highway vehicle use, and 43 CFR 8364 defines “closed” as it relates to closure and restriction orders. In reference to locatable minerals “closed” means segregated or withdrawn from the operation of the Mining Law of 1872.

CODE OF FEDERAL REGULATIONS (CFR). The codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government. The Code is divided into 50 titles that represent broad areas subject to regulation.

COLLABORATION. A cooperative process in which interested parties, often with widely varied interests, work together to seek solutions with broad support for managing public and other lands.

COMMUNITY RECREATION-TOURISM MARKET. A community or communities that depends on public lands recreation and related tourism use, growth, and development. Major investments in facilities and visitor assistance are authorized within Special Recreation Management Areas (SRMA) where the BLM’s strategy is to target demonstrated community recreation-tourism market demand.

Here, recreation management actions are geared toward meeting the primary recreation-tourism market demand for specific activity, experience, and benefit opportunities. These opportunities are produced through maintaining prescribed natural resource and community setting character and by structuring and implementing management, marketing, monitoring, and administrative actions accordingly.

CONDITION CLASS (CC). A classification of a vegetation community's variance or departure from historic fire conditions. Fire Condition Classes can be Fire Condition Class 1, representing low departure from historic fire regime; Fire Condition Class 2, representing moderate departure from historic fire regime; or Fire Condition Class 3, representing high departure from historic fire regime.

COOPERATING AGENCY. Assists the lead Federal agency in developing an EA or EIS. The CEQ regulations implementing NEPA define a cooperating agency as any agency that has jurisdiction by law or special expertise for proposals covered by NEPA (40 CFR 1501.6). Any Federal, state, local government jurisdiction with such qualifications may become a cooperating agency by agreement with the lead agency.

CRITICAL GROWING PERIOD. The period in a plant's growth cycle when food (carbohydrate) reserves are the lowest and grazing is most harmful; for example, in grass species this period begins with the boot stage and closes with complete maturation of the fruit (seed).

CRITICAL HABITAT. Habitat designated by the US Fish and Wildlife Service under Section 4 of the Endangered Species Act and under the following criteria: 1) specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical or biological features essential to the conservation of the species and that may require special management or protection; or 2) specific areas outside the geographical area by the species at the time it is listed but that are considered essential to the conservation of the species.

CRUCIAL WINTER RANGE. A BLM definition that applies to elk, mule deer, and pronghorn habitat and made up of areas defined by Nevada Department of Wildlife as winter concentration areas and severe winter range:

- **Winter Concentration Area**—That part of winter range where densities are at least 200 percent greater than the surrounding winter range density during the same period used to define winter range in the average five winters out of ten.
- **Severe Winter Range**—That part of the overall range where 90 percent of the individuals are located when the annual snowpack is at its maximum or temperatures are at a minimum (or both) in the two worst winters out of ten.

CULTURAL RESOURCES. Locations of human activity, occupation, or use. Cultural resources include archaeological, historic, or architectural sites, structures, or places with important public and scientific uses and locations of traditional cultural or religious importance to specific social or cultural groups.

CULTURAL RESOURCES INVENTORY. A procedure to assess the potential presence of cultural resources. There are three classes of surveys:

- **Class I.** An existing data survey is an inventory of a study area to (1) provide a narrative overview of cultural resources by using existing information, and (2) to compile existing cultural resources site record data on which to base the development of the BLM's site record system.
- **Class II.** A sampling field inventory designed to locate, from surface and exposed profile indications, all cultural resource sites within a portion of an area so that an estimate can be made of the cultural resources for the entire area.
- **Class III.** An intensive field inventory designed to locate, from surface and exposed profile indications, all cultural resource sites in an area.

CUMULATIVE EFFECTS. The direct and indirect effects of a proposed project alternative's incremental impacts when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action.

DEFERRED/DEFERMENT. Term used in grazing management actions that denotes a less than one year period where no livestock grazing is allowed.

DESIRED CONDITION. A desired state for an ecosystem or ecosystem component that is based on its relationship with other interacting components. Usually implies a long-term goal for management.

DESTINATION RECREATION-TOURISM MARKET. National or regional recreation-tourism visitors and other constituents who value public lands as recreation-tourism destinations. Major investments in facilities and visitor assistance are authorized within SRMAs where the BLM's strategy is to target demonstrated destination recreation-tourism market demand. Here, recreation management actions are geared toward meeting primary recreation-tourism market demand for specific activity, experience, and benefit opportunities. These opportunities are produced through maintaining prescribed natural resource setting character and by structuring and implementing management, marketing, monitoring, and administrative actions accordingly.

DISCRETIONARY ACTIONS. These include livestock grazing, mineral leasing, and some lands actions.

DISPOSAL. A transaction that leads to the transfer of title of public lands from the federal government.

DIVERSITY. The relative abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area.

ECOSYSTEM. An interacting natural system including all the component organisms together with the abiotic environment that comprises one functioning whole (BLM Manual Section 1745).

ECOSYSTEM RESILIENCE. The ability of an ecosystem to restore or maintain biodiversity, ecosystem functions, and ecological structure and processes after a disturbance. Ecosystem resilience implies a return to some stable trajectory or stable rate or type of system dynamics after system disturbance.

ELIGIBLE RIVER SEGMENT. A section of a river that qualifies for inclusion in the National Wild and Scenic Rivers System through determination that it is free flowing and with its adjacent land area possessing at least one river-related value considered to be outstandingly remarkable.

EMISSION. Unwanted substances released by human activity into the air.

ENDANGERED SPECIES. An animal or plant species designated by the US Fish and Wildlife Service or National Marine Fisheries Service (NOAA Fisheries) to receive federal protection because it is in danger of extinction throughout all or a significant portion of its natural range.

ENVIRONMENTAL ASSESSMENT. A concise public document prepared to provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact. It includes a brief discussion of the need for the proposal, the alternatives considered, the environmental impact of the proposed action and alternatives, and a list of agencies and individuals consulted.

ENVIRONMENTAL IMPACT STATEMENT (EIS). A formal public document prepared to analyze the impacts on the environment of a proposed project or action and released for comment and review. An EIS must meet NEPA requirements, CEQ guidelines, and the directives of the agency responsible for the proposed project or action.

EPHEMERAL STREAM. Stream reaches where water flows for only brief periods during storm runoff.

EROSION. Detachment or movement of soil or rock fragments by water, wind, or gravity. Accelerated erosion is much more rapid than normal, natural, or geologic erosion, primarily as a result of the influence of surface-disturbing activities of people, animals, or natural catastrophes.

EXCHANGE. A transaction whereby the federal government receives land or interests in land in exchange for other land or interests in land.

EXCLOSURE. A fence or other device that completely surrounds a relatively small area, such as a wetland or research plot, to exclude large nonnative animals, such as cattle and burros.

EXCLUSION AREA. Areas not available for location of rights-of-way subject to a determination by the District Manager/Authorized Officer to consider location of rights-of-way based on special management criteria.

EXOTIC SPECIES. All species of plants and animals not naturally occurring, either presently or historically, in any ecosystem of the United States (EO 11987) (BLM Manual Section 1745).

EXTENSIVE RECREATION MANAGEMENT AREA (ERMA). A public lands unit identified in land use plans containing all acreage not identified as a Special Recreation Management Area (SRMA). Recreation management actions within an ERMA are limited to only those of a custodial nature.

FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976 (FLPMA). Public Law 94-579 signed by the President on October 21, 1976. Establishes public land policy for management of lands administered by the BLM. FLPMA specifies several key directions for the BLM, notably (1) management on the basis of multiple-use and sustained yield, (2) land use plans prepared to guide

management actions, (3) public lands managed for the protection, development, and enhancement of resources, (4) public lands retained in federal ownership, and (5) public participation used in reaching management decisions.

FIRE BEHAVIOR. The manner in which a fire reacts to fuel, weather, and topography. Common terms used to describe behavior include smoldering, creeping, running, spotting, torching, and crowning.

FIRE FOR RESOURCE BENEFIT. The application of the response to naturally ignited wildland fires based on social, legal and ecological consequences of the fire to accomplish specific resource management objectives including for resource benefit in predefined designated areas (conditional fire suppression areas).

FIRE INTENSITY. Technically calculated as the energy release per unit length of flame front. Generally, fire intensity is a component of fire behavior and refers to the heat of the fire. Fire intensity is measured as the fire burns. A high intensity fire would be more difficult to suppress than a low intensity fire.

FIRE SEVERITY. The effect of fire. Severity is reflected in killed vegetation or soil damage. Fire severity is determined after the fire. A high intensity fire may not have severe fire effects. High severity fire could result in soil erosion, sediment in water, landslides, and weed infestation. Often, low severity fire is desirable for removing dead fuels.

FIRE SUPPRESSION. A coordinated effort to put out a fire.

FLUID MINERALS. Oil, gas, geothermal resources, carbon dioxide, and coalbed methane.

FORAGE. All browse and herbaceous growth available and acceptable to grazing animals or that may be harvested for feeding purposes. Forage includes pasture, rangelands, and crop aftermath. Feed includes forage, hay, and grains.

FUELBREAK. A wide strip or block of land on which vegetation has been removed or modified so that fires burning into it can be more readily extinguished.

FUGITIVE DUST. Airborne pulverized soil particles that drift from an area of disturbance.

GRAZING. Consumption of forage from rangelands or pastures by livestock, wild horses/burros or wildlife.

GRAZING ALLOTMENT. An area of land where one or more operators graze their livestock. It generally consists of public lands but may include parcels of private or state-owned lands. The number of livestock and period of use are stipulated for each allotment.

GRAZING FEE. A charge, usually monthly, for grazing a specific kind of livestock.

GRAZING PERMIT/LICENSE/LEASE. Official written permission to graze a specific number, kind, and class of livestock for a specified period on a defined rangeland.

GROUNDWATER. Water beneath the land surface, in the zone of saturation.

GUIDELINES. Actions or management practices that may be used to achieve desired outcomes, sometimes expressed as best management practices. Guidelines may be identified during the land use planning process, but they are not considered a land use plan decision unless the plan specifies that they are mandatory. Guidelines for grazing administration must conform to 43 CFR 4180.2.

GUZZLER. General term covering such devices as guzzlers and wildlife drinkers. A natural or artificially constructed structure or device to capture and hold naturally flowing water to make it accessible to small and large animals. Most guzzlers involve above or below ground piping, storage tanks, and valves.

HABITAT. A specific set of physical conditions that surround a single species, a group of species, or a large community. In wildlife management, the major components of habitat are considered to be food, water, cover, and living space.

HABITAT CONSERVATION PLAN (HCP). A comprehensive planning document pursuant to Section 10(a)(2) of the Endangered Species Act that is a mandatory component of an incidental take permit for a project with no federal nexus. (See Multi-Species Conservation Plan.)

HABITAT MANAGEMENT PLAN (HMP). A written and approved activity plan for a geographical area that identifies habitat management activities to be implemented in achieving specific objectives of planning decisions.

HARDROCK MINERALS. Locatable minerals that are neither leasable (such as oil, gas, coal, oil shale, phosphate, sodium, potassium, sulphur, asphalt, or gilsonite) nor saleable (such as common variety sand and gravel). Hardrock minerals include copper, lead, zinc, magnesium, nickel, tungsten, gold, silver, bentonite, barite, feldspar, fluor spar, and uranium.

HAZARDOUS MATERIAL. A substance, pollutant, or contaminant that, due to its quantity, concentration, or physical or chemical characteristics, poses a potential hazard to human health and safety or to the environment if released into the workplace or the environment.

HERBICIDES. Chemicals (pesticides) used to kill plants.

HERD AREA (HA). Related to wild horses and burros, an HA is the geographic area identified as having been used by a wild horse or burro herd as its habitat in 1971.

HERD MANAGEMENT AREA (HMA). Related to wild horses and burros, an HMA is an area or areas established within the HA for the maintenance of wild horses and burros.

HIGH WALLS. Uphill sides of contour mine excavations.

IMPACT. The effect, influence, alteration, or imprint caused by an action.

IMPLEMENTATION PLAN. An area or site-specific plan written to implement decisions made in a land use plan. Implementation plans include both activity plans and project plans (they are types of implementation plans).

INDIAN TRUST ASSETS. Indian trust resources are legal interests in assets held in trust by the federal government for federally recognized Indian tribes or nations or for individual Indians. These assets can be real property, physical assets, or intangible property rights.

INDICATOR. Components of a system whose characteristics (presence or absence, quantity, distribution) are used as an index of an attribute (e.g., rangeland health attribute) that are too difficult, inconvenient, or expensive to measure.

INTEGRATED WEED MANAGEMENT. A system for planning and implementation of a program to select a method for containing or controlling an undesirable plant species or group of species using all available methods including; education, prevention, physical or mechanical methods, biological control agents, herbicide methods, cultural methods and general land management. It uses an interdisciplinary and ecological approach to managing unwanted plants-weeds.

INTERDISCIPLINARY TEAM. A formation of varied land use and resource specialists providing a coordinated, integrated information base for overall land use planning and management.

INTERIOR BOARD OF LAND APPEALS (IBLA). A board within the Department of the Interior's Office of Hearings and Appeals that acts for the Secretary of the Interior by responding to appeals of decisions on the use and disposition of public lands and resources. Because IBLA acts for and on behalf of the Secretary of the Interior, its decisions usually represent the Department's final decision but are subject to the Secretary's review and to appeal in federal court.

INTRODUCTIONS. The release, escape, or establishment of an exotic species into a natural ecosystem (EO 11987) (BLM Manual Section 1745).

INVASIVE NONNATIVE SPECIES. Species that have been introduced into an area in which they did not evolve and in which they usually have few or no natural enemies to limit their reproduction and spread. They are animal and plant species with an extraordinary capacity for multiplication and spread at the expense of native species. These species can cause environmental harm by significantly changing ecosystem composition, structure, or processes and can cause economic harm or harm to human health. Plants in this category may or may not be designated as noxious weeds.

KEY AREA. A portion of the range, which because of its location, grazing and browsing value, and/or uses serves as an indicative sample of rangeland conditions, trend, or degree of seasonal use.

KEY (FORAGE) SPECIES. (1) Species that, because of their importance, must be considered in a management program or (2) forage species whose use shows the degree of use of associated species.

KGRA (KNOWN GEOTHERMAL RESOURCE AREA). An area that the BLM determined; based on geologic and technical evidence, that a person with geothermal knowledge would spend money to develop the geothermal resource, areas that were located near wells capable of commercial production of geothermal fluids, or areas where there was a competitive interest in geothermal resource development (not a singular criterion existed). The BLM geothermal leasing regulation of May 2007 replaced the term KGRA with "lease areas" to identify potential lease areas.

LAND HEALTH STANDARDS. The degree to which the integrity of the soil and ecological process of ecosystems are sustained.

LAND TENURE. Refers to ownership of a parcel of land. BLM-managed public lands are owned by the United States government for the citizens of the United States.

LEASABLE MINERALS. Those minerals or materials designated as leasable under the Mineral Leasing Act of 1920. They include coal, phosphate, asphalt, sulphur, potassium and sodium minerals, and oil and gas. Geothermal resources are also leasable under the Geothermal Steam Act of 1970.

LEASING ACT OF 1920. Federal law governing the leasing of public lands associated with petroleum, natural gas, coal, phosphate, asphalt, sulphur, potassium and sodium.

LEK. Areas used by sage-grouse during the mating season where males display to attract receptive females. These sites are characterized by low vegetation with sparse shrubs, often surrounded by big sagebrush communities. Strutting grounds or leks are considered to be the center of sage-grouse activities. Leks can be categorized as (Connelly 2000):

- Occupied Lek—A traditional display area in or adjacent to sagebrush-dominated habitats that has been attended by two or more male sage-grouse in two or more of the previous five years;
- Active Lek—A lek attended by one or more male sage-grouse as determined by that year's lek survey; or
- Inactive Lek—A lek not attended by one or more male sage-grouse as determined by that year's lek survey.

LENTIC. Pertaining to standing water, such as lakes and ponds.

LITHIC SITE. An archaeological site containing debris left from the manufacture, use, or maintenance of flaked stone tools.

LOCATABLE MINERALS. Minerals or materials subject to claim and development under the Mining Law of 1872, as amended. Generally includes metallic minerals, such as gold and silver, and other materials not subject to lease or sale, such as some bentonites, limestone, talc, and some zeolites. Whether or not a particular mineral deposit is locatable depends on such factors as quality, quantity, mineability, demand, and marketability.

LONG-TERM EFFECT. This could occur for several years after implementation of an alternative.

LOTIC. Pertaining to actively moving water.

MECHANICAL TREATMENT. The use of machinery, tools, or mechanized equipment to apply treatments (such as harrowing, disking, plowing, mowing, drill seeding, etc.) in order to masticate or remove vegetation and hazardous fuels or prepare seed beds in order to meet resource objectives.

MEMORANDUM OF UNDERSTANDING (MOU). Agreements with other district offices and agencies where resources (e.g., wild horses and burros) are managed across district office and agency administrative boundaries.

MINERAL ENTRY. Claiming public lands (administered by the BLM) under the Mining Law of 1872 for the purpose of exploiting minerals. May also refer to mineral exploration and development under the mineral leasing laws and the Material Sale Act of 1947.

MINERAL MATERIALS. Common varieties of such commodities as sand, building stone, gravel, clay, and moss rock obtainable under the Minerals Act of 1947, as amended.

MINERAL WITHDRAWALS. Closure of public land to all or some of the mining laws, including sales, leasing and claim location, subject to valid existing rights.

MINING LAW OF 1872. Provides for claiming and gaining title to locatable minerals on public lands. Also referred to as the General Mining Laws or Mining Laws.

MITIGATION. Alleviation or lessening of possible adverse effects on a resource by applying appropriate protective measures or adequate scientific study. Mitigation may be achieved by avoidance, minimization, rectification, reduction, and compensation.

MONITORING. The timed collection of information to determine the effects of resource management and to identify changing resource conditions or needs. Monitoring includes the periodic evaluation of management actions to determine how well objectives were met and how management practices should be adjusted.

MOTORIZED VEHICLE. A device that is designed or used to transport people or objects and whose propulsion is provided by an engine or motor. The engine (motor) can be any number of machines designed to convert energy into mechanical propulsion. These machines include but are not limited to internal and external (steam) combustion engines, electric motors, motors driven by elastic energy (springs) and/or motors driven by non-combustive chemical reactions.

MULTIPLE-USE. Management of the various surface and subsurface resources so that they are jointly used in the manner that will best meet the present and future needs of the public without permanent impairment of the productivity of the land or the quality of the environment.

NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS). The allowable concentrations of air pollutants specified by the federal government. The air quality standards are divided into primary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public health) and secondary standards (based on the air quality criteria and allowing an adequate margin of safety and requisite to protect the public welfare) from any unknown or expected adverse effects of air pollutants.

NATIONAL CONSERVATION AREAS (NCA). Areas designated by Congress so that present and future generations of Americans can benefit from the conservation, protection, enhancement, use, and management of these areas by enjoying their natural, recreational, cultural, wildlife, aquatic, archaeological, paleontological, historical, educational, and scientific resources and values.

NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (NEPA). Public Law 91-190. Establishes environmental policy for the nation. Among other things, NEPA requires federal agencies to consider environmental values in decision making processes.

NATIONAL HISTORIC PRESERVATION ACT (NHPA). The primary federal law providing for the protection and preservation of cultural resources. The NHPA established the National Register of Historic Places, the Advisory Council on Historic Preservation, and the State Historic Preservation Office.

NATIONAL HISTORIC TRAILS (NHT). Trails established to identify and protect historic routes; they follow as closely as possible the original trails or routes of travel of national historic significance.

NATIONAL REGISTER OF HISTORIC PLACES (NHRP). A listing or register of architectural, historical, archaeological, and cultural sites of local, state, or national significance established by the Historic Preservation Act of 1966 and maintained by the National Park Service.

NATIONAL SCENIC TRAILS. Trails established by an Act of Congress that are intended to provide for maximum outdoor recreation potential and for the conservation and enjoyment of nationally significant scenic, historical, natural, and cultural qualities of the areas through which these trails pass. National Scenic Trails may be located to represent desert, marsh, grassland, mountain, canyon, river, forest, and other areas, as well as land forms that exhibit significant characteristics of the physiographic regions of the nation.

NATIONAL WILD AND SCENIC RIVERS SYSTEM (NWSRS). Rivers with outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, or similar values designated by Congress under the Wild and Scenic Rivers Act of October 2, 1968, for the preservation of their free-flowing condition.

NATIVE SPECIES. All species of plants and animals naturally occurring, either presently or historically, in any ecosystem of the United States (EO 11987) (BLM Manual Section 1745).

NO SURFACE OCCUPANCY (NSO). A mineral leasing stipulation that prohibits occupancy or disturbance on all or part of the lease surface in order to protect special values or uses.

OBJECTIVE. A concise, time specific statement of measurable planned results that respond to pre-established goals or desired conditions.

OFF-HIGHWAY VEHICLE (OFF-ROAD VEHICLE). Any motorized vehicle capable of, or designed for, travel on or over land, water, or other natural terrain, excluding: (1) any nonamphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by an officer or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when being used for national defense.

OFF-HIGHWAY VEHICLE AREA DESIGNATIONS. BLM-administered lands in the WD are designated as Open, Limited, or Closed for OHV use.

- **Open**—Designated areas where all types of motorized vehicles (such as jeeps, all-terrain vehicles, and motorized dirt bikes) are permitted at all times, anywhere in the area, on roads or cross country, subject to the operating regulations and vehicle standards set forth in 43 CFR subparts 8341 and 8342.
- **Limited**—Designated areas where motorized vehicles are restricted to designated routes. Off-road cross-country travel is prohibited in limited areas, unless an area is specifically identified as one where cross-country over-snow travel is allowed. Some existing routes may be closed in limited areas.

- **Closed**—Designated areas where off-road motorized vehicle travel is prohibited year-long. Emergency use of vehicles is allowed year-long.

OLD GROWTH FOREST. Ecosystems distinguished by old trees (minimum age of 150 years) and related structural features. Old-growth encompasses the later stages of stand development that typically differ from earlier stages in several ways including; tree size, accumulations of large dead, woody material; number of canopy layers; species composition; and ecosystem function (USFS 1993). Old-growth forest tree descriptions or information by the Society of American Foresters (SAF) for Region 4, Nevada, include Whitebark Pine SAF Cover Type 209 and Limber Pine coverage type 237 (IM 2005-110; Meeting Healthy Forests Restoration Act – Old growth management.)

PALEONTOLOGICAL RESOURCES. The physical remains or other physical evidence of plants and animals preserved in soils and sedimentary rock formations. Paleontological resources are important for correlating and dating rock strata and for understanding past environments, environmental change, and the evolution of life.

PARTICULATE MATTER (PM). One of the six “criteria” pollutants for which the US EPA established National Ambient Air Quality Standards. Particulate matter is defined as either fine particulates, with an aerodynamic diameter of 10 micrometers (PM₁₀) or less, or fine particulates with an aerodynamic diameter of 2.5 micrometers or less (PM_{2.5}).

PERENNIAL PLANT. A plant that has a life cycle of three or more years.

PERENNIAL STREAM. A stream that flows throughout the year for many years.

PERMITTEE. One who holds a permit to graze livestock on state, federal, or certain privately owned lands.

PESTICIDE. A general term used to describe chemicals that kill harmful organisms such as insects, fungi, plants, etc. Pesticides include herbicides, insecticides, and fungicides.

PLANNING AREA. The geographical area for which land use and resource management plans are developed and maintained. The planning area assessed in this RMP includes all federal lands managed by the BLM within the WD administrative boundary, excluding lands managed under the BRDHRC NCA RMP.

PLANNING ISSUES. Concerns, conflicts, and problems with the existing management of public lands. Frequently, issues are based on how land uses affect resources. Some issues are concerned with how land uses can affect other land uses, or how the protection of resources affects land uses.

PLANT COMMUNITIES. Assemblages of plants that grow together in space and time.

POPULATION MANAGEMENT UNIT. Defines distribution of sage-grouse within certain geographical areas and defines conservation goals to protect sage-grouse.

PRESCRIBED FIRE TREATMENTS. Any fire ignited by management actions to meet specific objectives relating to hazardous fuels reductions or habitat improvement or resource benefit. A written, approved prescribed fire plan must exist prior to ignition.

PREVENTION (WILDLAND FIRE). Activities directed at reducing the incident of fires including public education, law enforcement, personal contact and reduction of fuel hazards.**PRIORITY HABITAT.** See exclusion area definition above.

PRIORITY SPECIES AND HABITAT. These species may include federal or state listed endangered or threatened species of fish, wildlife, or plants of significant economic or recreational value; species highly sensitive to land use changes; individuals or populations of special significance; and aquatic or riparian areas or habitats of special significance (BLM Manual 6780).

PRIORITY WATERSHED. A watershed that contains either threatened or endangered species habitat for Lahontan cutthroat trout (LCT), identified recovery streams for LCT, and/or presence of municipal water supply collection areas. These watersheds are managed as closed to saleable and fluid minerals and not suitable for solid leasable minerals development (See discretion of the authorized officer criteria). Priority watersheds are also considered exclusion areas for location of rights-of-way (See exclusion areas above).

PRIORITY WILDLIFE HABITAT AREA. Areas containing priority wildlife species and habitats including special statues species. These areas are managed as closed to saleable and fluid minerals and not suitable for solid leasable minerals development (See discretion of the authorized officer criteria). Priority wildlife habitat areas are also considered exclusion areas for location of rights-of-way (See exclusion areas above).

PROPER FUNCTIONING CONDITION. (See BLM Manual H-4180 Rangeland Health Standards), States in part; (1) An element of the Fundamental of Rangeland Health for watersheds, and therefore a required element of State or regional standard and guidelines under 43 CFR 4180.2(b). (2) Condition in which vegetation and ground cover maintain soil conditions that can sustain natural biotic communities. For riparian areas, the process of determining function is described in BLM Technical Reference TR 1737-9. (3) Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows.

PUBLIC LAND. Any land and interest in land (outside of Alaska) owned by the US and administered by the Secretary of the Interior through the BLM.

RANGELAND. A kind of land on which the native vegetation, climax, or natural potential consists predominantly of grasses, grass-like plants, forbs, or shrubs. Rangeland includes lands revegetated naturally or artificially to provide plant cover that is managed like native vegetation. Rangelands may consist of natural grasslands, savannas, shrub lands, most deserts, tundra, alpine communities, coastal marshes, and wet meadows.

RAPTOR. Bird of prey with sharp talons and strongly curved beaks, such as hawks, owls, vultures, and eagles.

RECORD OF DECISION. A concise public record of decision associated with an EIS that identifies alternatives, provides the lead agency's final decision, the rationale behind the decision, practical means to avoid or minimize environmental harm and may provide for monitoring (See CEQ 40 CFR 1505.2).

RECOVERY HABITAT. Habitat for a listed species (stream or area) that was identified as historic, critical, necessary, and/or potential future habitat that is part of the recovery of a listed species within a Federal Recovery Plan.

RECREATION AND PUBLIC PURPOSES ACT (R&PP). Act of June 14, 1926 (44 Stat. 741), as amended. The act authorizes the sale or lease of public lands for recreational or public purposes to State and local governments and to qualified nonprofit organizations. Examples of typical uses under the act are historic monument sites, campgrounds, schools, fire houses, law enforcement facilities, municipal facilities, landfills, hospitals, parks, and fairgrounds.

RECREATION EXPERIENCES. Psychological outcomes realized either by recreation-tourism participants as a direct result of their on-site leisure engagements and recreation-tourism activity participation or by nonparticipating community residents as a result of their interaction with visitors and guests within their community or interaction with the BLM and other public and private recreation-tourism providers and their actions.

RECREATION NICHE. The place or position within the strategically targeted recreation-tourism market for each Special Recreation Management Area (SRMA) that is most capable of producing certain kinds of recreation opportunities and that is most responsive to identified visitor or resident customers, given available supply and current demand, for the production of specific recreation opportunities and the sustainable maintenance of accompanying natural resource and community setting character.

RECREATION OPPORTUNITIES. Favorable circumstances enabling visitors' engagement in a leisure activity to realize immediate psychological experiences and attain more lasting, value-added beneficial outcomes.

RECREATION SETTINGS. The collective distinguishing attributes of landscapes that influence, and sometimes actually determine, what kinds of recreation opportunities are produced.

RECREATION SETTING CHARACTER CONDITIONS. The distinguishing recreational qualities of any landscape, objectively defined along a continuum, ranging from primitive to urban landscapes, expressed in terms of the nature of the component parts of its physical, social, and administrative attributes. These recreational qualities can be both classified and mapped. This classification and mapping process would be based on variation that either exists (for example, setting descriptions) or is desired (for example, setting prescriptions) among component parts of the various physical, social, and administrative attributes of any landscape. The recreation opportunity spectrum is one of the tools for doing this.

RECREATION-TOURISM MARKET. Recreation-tourism visitors, affected community residents, affected local governments and private sector businesses, or other constituents and the communities or other places where these customers originate (local, regional, national, or international). Based on analysis of supply and demand, land use plans strategically identify primary recreation-tourism markets for each Special Recreation Management Area—destination, community, or undeveloped.

REESTABLISHMENT (REINTRODUCTION). The act of releasing or planting native species into habitat formerly occupied by that species for the purpose or intent of creating self-sustaining populations in the wild state (BLM Manual 1745).

REHABILITATION (WILDLAND FIRE). Efforts undertaken within three years of containment of a wildfire to repair or improve fire-damaged lands unlikely to recover naturally to management approved conditions, or to repair or replace minor facilities damaged by fire.

RESILIENCE. See ecosystem resilience.

RESOURCE ADVISORY COUNCIL (RAC). A council established by the Secretary of Interior per 43 CFR 1780 and other authorities to provide advice or recommendations to BLM management. In the Winnemucca District, the Sierra Front/NW Great Basin Resource Advisory Group serves as the RAC.

RESOURCE MANAGEMENT PLAN (RMP). A land use plan that establishes multiple-use guidelines and management objectives for a given planning area.

RESTORATION. The return or recovery of a habitat from a degraded state to its original community structure, natural complement of species, and natural functions.

REST PERIOD. Term used in grazing management actions that denotes a one year period where no livestock grazing is allowed.

RIGHT-OF-WAY. A grant that gives the grantee the right to use a specified piece land public land for a specific period time, for a specific purpose. The term also refers to the land covered by such a grant.

RIPARIAN. Situated on or pertaining to the bank of a river, stream, or other body of water. Normally describes plants of all types that grow rooted in the water table or sub-irrigation zone of streams, ponds, and springs.

RIPARIAN AREA. Habitat area along a stream, river or other body of water, distinguished by characteristic plant and animal communities.

ROAD. A linear route managed for use by low-clearance vehicles having two or more wheels and that has been improved and maintained by mechanical means to ensure relatively regular and continuous use. (A way maintained strictly by the passage of vehicles does not constitute a road.)

ROADLESS. Refers to the absence of roads that have been constructed and maintained by mechanical means to ensure regular and continuous use.

ROAD MAINTENANCE. Includes blading, brush removal, scarification, gravelling, water barring, spur ditching, establishing low water crossings, seeding, and installing cattle guards and culverts.

RUNOFF. A general term used to describe the portion of precipitation on the land that ultimately reaches streams; may include channel and nonchannel flow.

SALEABLE MINERALS. Minerals that may be sold under the Material Sale Act of 1947, as amended. Included are common varieties of sand, stone, gravel, and clay.

SCENIC INTEGRITY. The state of naturalness or, conversely, the state of disturbance created by human activities or alteration. Integrity is stated in degrees of deviation from the existing landscape character.

SCOPING PROCESS. An early and open public participation process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.

SEASON OF USE. The time during which livestock grazing is permitted on a given range area, as specified in the grazing permit.

SEEDING. A vegetation treatment that includes the application of grass, forb, or shrub seed, either by air or from the ground. In areas of gentle terrain, ground applications of seed are often accomplished with a rangeland drill. Seeding allows native species or placeholder species to become established and for disturbed areas to be restored to a perennial-dominated cover type, thereby decreasing the risk of subsequent invasion by exotic plant species. Seeding would be used primarily as a follow-up treatment in areas where disturbance or the previously described treatments have removed exotic plant species and their residue.

SEEPS. Groundwater discharge areas. In general, seeps have less water flow than a spring.

SEVENTY-FIVE PERCENT BIRD BREEDING DENSITY AREAS. Breeding density areas contain 25 percent of the known sage-grouse population within 3.9 percent (2.92 million ha) of the species range, and 75 percent of the birds are within 27 percent of the species range (20.4 million ha). Spatial organizational framework is based on the Western Association of Fish and Wildlife Agencies (WAFWA) management zones (Connelly et al. 2004, Stiver et al. 2006).

SHORT-TERM EFFECT. The effect occurs only during or immediately after implementation of the alternative.

SIGNIFICANT PROGRESS. Movement towards meeting standards and conforming guidelines that is acceptable in terms of rate and magnitude. Acceptable levels of rate and magnitude must be realistic in terms of capability of resources, but must also be as expeditious and effective as practical.

SOUTHERN NEVADA PUBLIC LAND MANAGEMENT ACT (SNPLMA). Approved October 1998 (Public Law 105-263). Provides for the disposal of public land within a specific area in the Las Vegas Valley and creates a special account into which 85 percent of the revenue generated by land sales or exchanges in the Las Vegas Valley is deposited. The remaining 15 percent goes to state and local governments. Revenue in the special account can be used for the acquisition of environmentally sensitive lands in Nevada, capital improvements, development of a multispecies habitat conservation plan in Clark County, and development of parks, trails, and natural areas in Clark County.

SOILS. (1) The unconsolidated mineral material on the immediate surface of the earth that serves as the natural medium for the growth of land plants. (2) The unconsolidated mineral matter of the surface of the earth that has been influenced by genetic and environmental factors, including parent material, climate, topography, all acting over a period of time and producing soil that differs from the parent material in physical, chemical, biological and morphological properties and characteristics.

SOIL COMPACTION. A decrease in the volume of soil as a result of compression stress.

SOIL SERIES. A group of soils having genetic horizons (layers) that, except for texture the surface layer, have similar characteristics and arrangement in the profile.

SPECIAL RECREATION MANAGEMENT AREA (SRMA). A public lands unit identified in land use plans to direct recreation funding and personnel to fulfill commitments made to provide specific, structured recreation opportunities (that is, activity, experience, and benefit opportunities). Both land use plan decisions and subsequent implementing actions for recreation in each Special Recreation Management Area (SRMA) are geared to a strategically identified primary market—destination, community, or undeveloped.

SPECIAL RECREATION PERMIT. A permit that authorizes the recreational use of an area and is issued pursuant to the regulations contained in 43 CFR Subpart 2930. Under the Federal Land Policy and Management Act of 1976, implemented by these regulations, special recreation permits are required for all commercial use, for most competitive events, and for the individual noncommercial use of special areas where permits are required.

SPECIAL STATUS SPECIES. Collectively, federally listed or proposed and BLM sensitive species, which include both federal candidate species and delisted species within five years of delisting.

SPLIT ESTATE. A land tenure term to describe when the surface land rights and the subsurface mineral rights have been severed from each other and are held by different owners.

STAND (FOREST STAND). A group of trees that occupy a specific area and are similar in species, age, and condition.

STANDARD. A description of the physical and biological conditions or degree of function required for healthy, sustainable lands (e.g., Land Health Standards). To be expressed as a desired outcome (goal).

STANDARD OPERATING PROCEDURE (SOP). A written procedure or set of written procedures providing direction for consistently and correctly performing routine operations. These written procedures set forth methods expected to be followed during the performance of the particular task. The SOPs for the BLM, Winnemucca District Office, are approved by the land use manager and are adopted as policy for the Winnemucca District Office.

STANDARDS FOR RANGELAND HEALTH. Standards of land health are expressions of levels of physical and biological condition or degrees of function required for healthy lands and sustainable uses, and define minimum resource conditions that must be achieved and maintained.

SUITABLE RIVER. A river segment found, through administrative study by an appropriate agency, to meet the criteria for designation as a component of the National Wild and Scenic Rivers System, specified in Section 4(a) of the Wild and Scenic Rivers Act.

SURFACE DISTURBANCE. Any disruption of the soil or vegetation beyond what is described under the casual use definitions and which results in soil surface detachment, mixing or alteration.

SUSTAINABLE DEVELOPMENT. Post-operational land uses that intend to benefit local communities and economies, while ensuring the well-being of the environment.

SUSTAINED YIELD. The continuation of a healthy desired plant community.

TEMPORARY NON-RENEWABLE (TNR). A temporary non-renewable grazing permit or lease is issued on an annual basis to qualified applicants when forage is temporarily available, provided this use is consistent with multiple use objectives and does not interfere with existing livestock operations on public lands.

THRIVING NATURAL ECOLOGICAL BALANCE. A “thriving ecological balance” is defined as follows: “The goal of wild horse and burro management should be to maintain a thriving ecological balance between wild horse and burro populations, wildlife, livestock and vegetation, and to protect the range from the deterioration associated with overpopulation of wild horses and burros.” (109 IBLA 115; also reference *Dahl vs. Clark*, *supra* at 592).

TOTAL DISSOLVED SOLIDS. Salt or an aggregate of carbonates, bicarbonates, chlorides, sulfates, phosphates, and nitrates of calcium, magnesium, manganese, sodium, potassium, and other cations that form salts.

TOTAL MAXIMUM DAILY LOAD (TMDL). A calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards, and an allocation of that amount to the pollutant’s sources.

TRADITIONAL CULTURAL PROPERTIES (TCP). A cultural property that is eligible for inclusion in the National Register of Historic Places because of its association with a living community’s cultural practices or beliefs that (a) are rooted in that community’s history and that (b) are important in maintaining the community’s continuing cultural identity.

TRAIL. A linear route managed for human-power (such as hiking or bicycling), stock (such as horses), or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

TRANSPLANT. The act of releasing or planting native species into habitat not previously occupied by that species for the purpose or intent of creating self-sustaining populations in the wild state (BLM Manual Section 1745).

TRESPASS. Any unauthorized use of public land.

UNDERSTORY. That portion of a plant community growing underneath the taller plants on a site.

UPLAND. Land at a higher elevation than the alluvial plain or low stream terrace; all lands outside the riparian-wetland and aquatic zones.

UTILITY CORRIDOR. Tract of land varying in width forming a passageway through which various commodities, such as oil, gas, and electricity, are transported.

VEGETATION RELEASE CRITERIA. Objectives used at a revegetation site to determine whether 1) the desirable species have been successfully established and provide sufficient cover to adequately protect the site from soil erosion, 2) there is evidence that a self-sustaining community has established, and 3) vegetative reproduction and establishment of the desirable seeded species has occurred. Revegetation monitoring activities are oriented toward addressing whether these criteria have been met.

VEGETATION TYPE. A plant community with immediately distinguishable characteristics based on and named after the apparent dominant plant species.

VEGETATIVE COMMUNITY TYPE. Refers to the species or various combinations of species that dominate or appear to dominate an area of rangeland or habitat.

VERTEBRATE. An animal having a backbone or spinal column.

VIEWSHED. The panorama from a given viewpoint that encompasses the visual landscape, including everything visible within a 360-degree radius.

VISUAL RESOURCES. The visible physical features on a landscape, (topography, water, vegetation, animals, structures, and other features) that make up the scenery of the area.

VISUAL RESOURCE MANAGEMENT (VRM). The inventory and planning actions taken to identify visual resource values and to establish objectives for managing those values and the management actions taken to achieve the visual resource management objectives.

VISUAL RESOURCE MANAGEMENT CLASSES. Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. VRM classes identify the degree of acceptable visual change within a characteristic landscape. There are four classes:

- **VRM Class I**—Preserves the existing characteristic landscape and allows for natural ecological changes only. Includes congressionally authorized areas (wilderness), WSAs and areas approved through the RMP where landscape modification activities would be restricted.
- **VRM Class II**—Retains the existing characteristic landscape. The level of change in any of the basic landscape elements due to management activities would be low and not evident.
- **VRM Class III**—Partially retains the existing characteristic landscape. The level of change in any of the basic landscape elements due to management activities may be moderate and - evident.
- **VRM Class IV**—Provides for major modifications of the characteristic landscape. The level of change in the basic landscape elements due to management activities can be high. Such activities may dominate the landscape and be the major focus of viewer attention.

WATERSHED. Topographical region or area delineated by water draining to a particular watercourse or body of water.

WETLANDS. Permanently wet or intermittently water-covered areas, such as swamps, marshes, bogs, potholes, swales, and glades.

WILDERNESS. An area formally designated by Congress as a part of the National Wilderness Preservation System.

WILDERNESS CHARACTERISTICS. Identified by Congress in the Wilderness Act of 1964, namely, size, naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation, and supplemental values, such as geological, archaeological, historical, ecological, scenic, or other features.

WILDERNESS STUDY AREA (WSA). A roadless area that has been inventoried (but not designated by Congress) and found to have wilderness characteristics as described in Section 603 of the Federal Land Policy and Management Act (FLPMA) of 1976 and Section 2(c) of the Wilderness Act of 1964.

WILDFIRE. An unplanned, unwanted wildland fire, including unauthorized human-caused fires, escaped allowed-fire-for-resource-benefit events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

WILDLAND FIRE. Any non-structure fire that occurs in the wildland. The three distinct types of wildland fire are wildfire, allow fire for resource benefit, and prescribed fire.

WILDLAND-URBAN INTERFACE (WUI). The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

WINTER RANGE. A Nevada Department of Wildlife definition that applies to elk and mule deer habitat. That part of the overall range where 90 percent of the individuals are located during the average five winters out of ten from the first heavy snowfall to spring green up or during a site-specific period of winter.

WITHDRAWAL. An action that restricts the use of public land and segregates the land from the operation of some or all of the public land and mineral laws. Withdrawals are also used to transfer jurisdiction of management of public lands to other federal agencies.

YEAR-LONG GRAZING. Continuous grazing for a calendar year.

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U.S. Fish and Wildlife Service

U.S. Bureau of Reclamation

Nevada Department of Wildlife

Nevada Department of Agriculture

Humboldt County

Pershing County

Washoe County

City of Winnemucca

N-2 Grazing Board

August 2013

